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JANUARY 31, 1946

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PAPER TRADE JOURNAL

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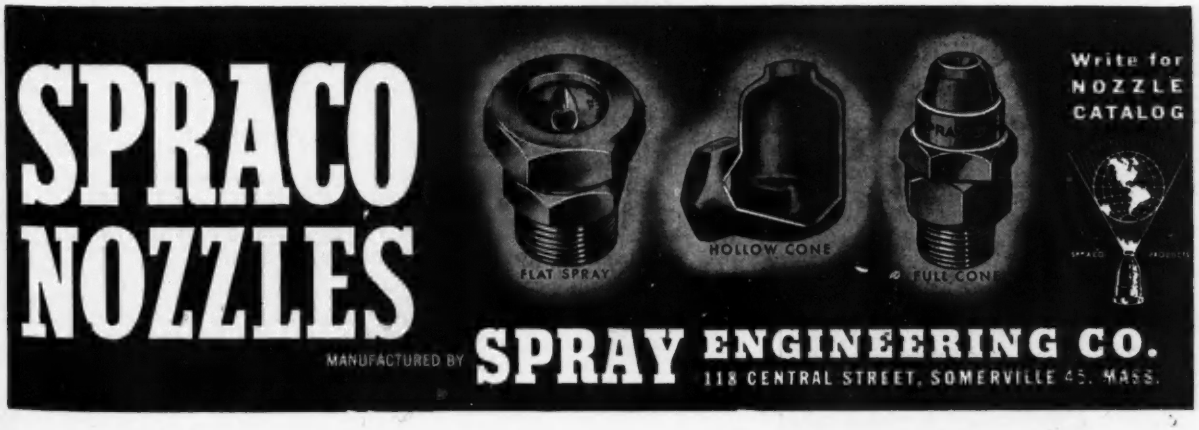

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Vol. 122, No. 5

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

January 31, 1946

Canada's Paper Industry Scans the Future

Pulp and Paper Men Hear Fowler Argue For Gradual Releasing of Price Controls—Technical and Woodlands Meetings Prove High Spots of Big Convention — Aubrey Crabtree Is Elected Chairman.

MONTREAL, Que., January 26, 1946—The thirty-third annual meeting of the Canadian Pulp and Paper Association, concluded here yesterday, brought some 800 delegates from all parts of the Dominion as well as a number of governmental and other official guests from Canada and the United States. But for the fact that hotel accommodation here is at a premium no doubt the attendance would have been even larger. As it was the organization of the convention, which covered three days, was more complicated than any in the history of the Association, but on the whole the general manager, A. E. Cadman, is to be congratulated on the success of the arrangements for the comfort of the delegates and the smooth running of the proceedings.

This convention is more than the annual business meeting of the Association, for, while that highlighted the gathering, the proceedings, relating strictly to the business of the parent organization, were, as usual, one of the less conspicuous features, occupying only the first half of the final day. It was preceded by two days of intense activity in the exchange of technical and scientific information among the top-ranking personnel of the industry from coast to coast, including executives, technical experts, engineers, chemists, woods managers and foresters. These formed an imposing gathering, for the pulp and paper industry, besides being Canada's largest manufacturing industry, is more adequately equipped than any other for carrying on individual and collective research.

The strongest of the many units in the Association is the Technical Section, with a membership of nearly 600. At that Section's meetings during the convention more than fifty technical papers, reports and topics were submitted for consideration and discussion. The next unit in importance is the Woodlands Section, which also has a strong membership, comprising the Dominion's outstanding authorities on all phases of forestry. Well over a score of papers and reports were considered and discussed at this Section's meetings.

This essentially professional character of the convention is one reason why the main address of the President was delivered at the luncheon which marked the close of the sessions. Unfortunately, R. M. Fowler, of Montreal, the permanent and full-time president of the Association, had to go to Peterborough, Ont., where his father had died on the previous day, and the address which he had prepared for the occasion was read by Charles Vining, of Montreal, chairman of the Executive Committee of the Newsprint Association of Canada.

AUBREY CRABTREE
Heads CPPA as Chairman

The President's Address

In the address, which was devoted mainly to the industry's transition problems, Mr. Fowler expressed the hope that there would be a gradual rather than a full-scale de-control of price measures, saying that no responsible person could argue that Canada should lose the benefits of four years of successful price control by a too sudden and too early removal of all controls.

Because the pulp and paper industry believed that inflation was dangerous both to the industry and the national economy throughout the war, the industry had given active and continuous support to the government's stabilization policy and had accepted price controls because the industry knew the dangers that would come with inflation.

"But, having reiterated our support for the basic policy of price control," continued Mr. Fowler, "it must be said there are serious problems for this industry as a result of present price regulations. After four years with scarcely any change in domestic prices it is not strange that serious inequities have developed and require adjustment."

He added that today there was a still further factor to consider as the industry approached the end of government controls, that being the necessity of having orderly decontrols and, to do so, it was important to take account of the developments that have permanently changed the cost structure.

"If this flexibility," Mr. Fowler said, "is not forthcoming, I fear that, in addition to suffering losses from uneconomic prices, there will be two serious and permanent results." These were: (1) that the in-

dustry would not be able to do its full share in the job of reconstruction and rehabilitation; (2) that the shock of de-control from a too rigid price control system would be seriously and unnecessarily damaging.

Inadequate Prices Holding Up Expansion

As to the first of these two fears, he said that the war had increased industrial activity and had created greater demands for pulp and paper products. It was to be hoped that domestic peacetime demands for pulp and paper would continue to expand, but careful consideration and correlation must be given to the many programs to increase efficiency and ensure adequate production for expanded domestic market—programs "that now are being held up by present inadequate prices."

"These programs," he continued, "would assist in the achievement of the government's declared object to maintain a high level of employment. They would ensure adequate production in this industry and would thereby contribute to the battle against inflation. After all adequate production is more effective than any price control system to prevent inflation."

As to his second fear, he said that there would be violent price changes when controls are removed which would be damaging to the harmony and stability of the industry if a system of gradual price control in successive stages could not be devised.

"It will take years of steady uphill work to repair the strained fabrics of civilization," he cautioned. "In the process here in Canada I believe the pulp and paper industry has a great responsibility. As Canada's greatest industry, free as we are from serious wartime dislocations and readjustments, the pulp and paper industry, if it can work together with a common purpose, can be a great constructive force in Canadian industrial life."

"The industry could be a leader and an example for other nations. It could aid in the task of reconstruction and rehabilitation, and it could spearhead the development of a new high level for international trade."

Section Reports

Following the luncheon reports of the various Sections, tabled during the sessions, were made public.

B. F. Avery, of Fort William, Ont., chairman of the Woodlands Section, reported that its work during the past year was directed among other activities, towards obtaining federal action in behalf of suppression and control of destructive forest insects, continuation of training of camp cooks, and initiation of study of balanced diet for woods workers. He disclosed that plans are being laid for conducting a school for cooks in Ontario in 1946.

E. A. Smith, of Thorold, Int., chairman of the Board Section, said that not only were the quota requirements of the box makers adequately met in 1945, but tonnage "in goodly quantities" was exported to the United Kingdom commensurate with available shipping space.

G. W. Earnshaw, of Ottawa, chairman of the Book and Writing Section, reported that the demand for paper continued to exceed the supply and quotas were established by all mills to assure equitable distribution in Canada.

R. B. Hall, of Montreal, chairman of the Specialty Papers Section, said that during 1946, with a partial lifting of controls in prospect, increased production is anticipated.

J. O. Chenevert, of Montreal, chairman of the Wrapping Paper Section, said indications are that requirements for civilian use during 1946 will be supplied at least on the same basis as in 1945.

Reports were also received from the Chemical Pulp, Mechanical Pulp, and Traffic Sections.

State of Industry in Europe

A "Highlight Session" of the Technical Section was a panel discussion of European developments in pulp and paper manufacture during the war years. This discussion was led by members of the Section and others who had recently visited Europe. It was under the chairmanship of Dr. Allan C. Hill, technical director, Anglo-Canadian Pulp and Paper Mills, Quebec, one of a party of 45 Canadian scientists who recently went to Germany and Scandinavian countries at the request of the federal department of Reconstruction. He spent the summer and autumn observing technical developments in the pulp and paper industries of Germany, the Scandinavian countries and the United Kingdom.

Dr. Hill said he saw in the post-war drive by the Northern European pulp and paper industry to re-establish its position a direct challenge to Canada's own industry demanding its best efforts to maintain and improve its position in the world markets. At the same time Canada had a great many friends among the nations whose paper needs were filled by the Dominion in wartime, and this was a factor in the prospects.

Germany Lagging in Technique

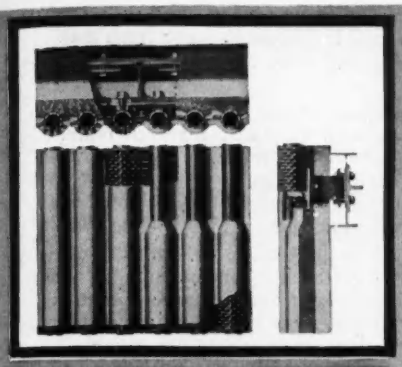
In Germany, he said, they found the mills were not up to the technical standards of those in Canada and the United States and that from all appearance little money had been spent to modernize the plants or to install new machinery. "We found the mills very little damaged by Allied bombings," he continued, "and many of them, when we arrived in Germany, were operating again, turning out paper for the Allied military government, papers for roofing and building needs and also paper for school textbooks."

Visiting Norway and Finland, Dr. Hill said he found the industry in a high state of technical development, but no higher than that in Canada and the United States, and in some cases not as high. Shortage of fuel, however, had cut output considerably, because wood had to be used as fuel. In some cases mills were forced to close down entirely. He concluded by urging the need here of continuous improvement in operating methods, continuing search for new processes and new products, and a greater recognition of the need for and the value of fundamental research.

Particular fields of pulp and paper technology, as observed in Europe, were then discussed by experts in these fields. W. Boyd Campbell, of the Pulp and Paper Research Institute of Canada, spoke on "General Observations in Pulp and Paper Development"; Niles M. Anderson, on sulphate pulp manufacture; Gerard Larocque, of The News Syndicate Co., New York, on newsprint manufacture and printing; Ferdinand Kraft, of the Marathon Paper Mills of Canada Limited, on sulphite and sulphate bleaching; George Balko, of the Mead Corporation, Chillicothe, Ohio, on paper manufacture; and J. N. McGovern, of the U. S. Forest Products Laboratory, Madison, Wis., on sulphite pulp manufacture.

Woodlands Operations

R. M. Fowler, president of the Association, in opening the proceedings of the Woodlands Section,



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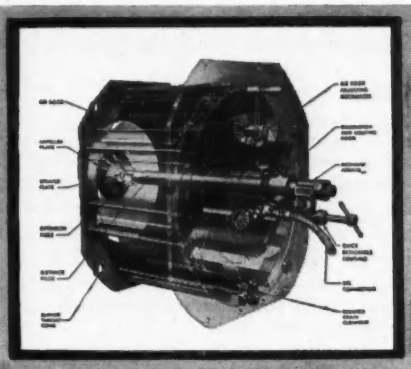

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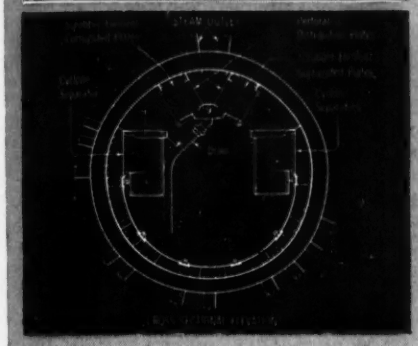

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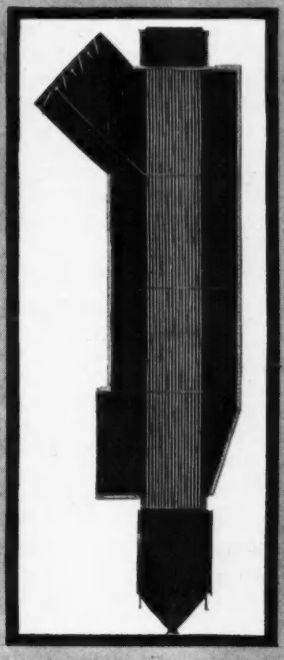

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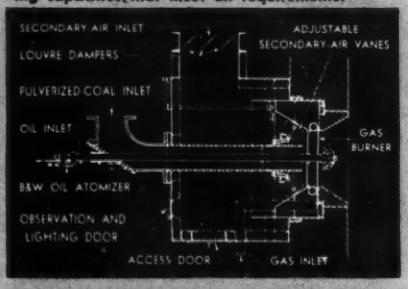

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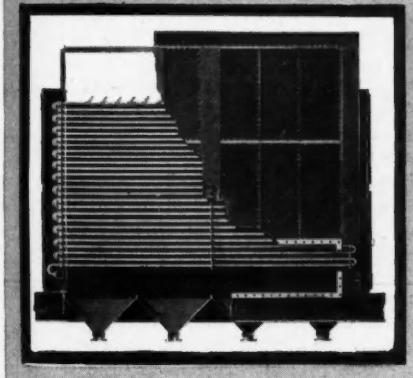

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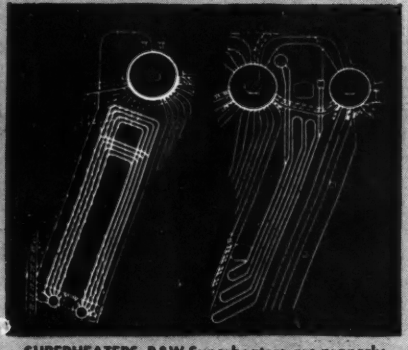

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said he believed the Section's work was fundamental to the future prosperity of the pulp and paper industry.

"I want to say," he remarked, "that I think there is an important task, within the industry and within the Association, for the Woodlands Section to perform. It is the task of developing new ideas on woodlands operations and the selling of those ideas within the industry so that they can be translated into action. I regard the Woodlands Section's achievements in studying the ravages of the spruce budworm as having had a very substantial influence in the federal Government's decision, recently announced, to establish a Forest Insects Control Board.

"The formation of this Board marks the entry of the Dominion Government into forestry problems requiring national treatment. The organization of a nationwide attack on injurious forest insects should create no problem of Dominion-Provincial relations. The Dominion is not infringing on the proprietary or revenue rights of the provinces. It is a research and conservation measure of national importance, and quite properly is being attacked on a national basis."

Reports of the year's activities of the Woodlands Section were presented by the chairman, B. F. Avery, Great Lakes Paper Company, and the Section's manager, A. M. Koroloff, of the Pulp and Paper Research Institute. These were followed by the presentation of papers, and discussions thereon, relating to forest policy, silviculture, forest protection, and to many phases of logging.

Operation of Automotive Vehicles

Of particular interest to practical woodsmen was an address delivered at a joint luncheon of the Woodlands and Technical Sections by Prof. R. E. Jamieson, of McGill University, who spoke on "Some Canadian Contributions in Army Vehicle Design." He said that users of automotive vehicles who find it difficult to start these on cold wintry mornings should concentrate on keeping the battery warm rather than keeping the engine warm. In the war he was director-general of engineering design in the Department of Munitions and Supply, and he said that tests made by Canadian engineers revealed that a warm battery could turn over a cold engine much more easily than a cold battery could start a warm engine.

It was also found, he said, that there need be no hesitation in using the ordinary primer and diluter in cold spells above 20 degrees Fahrenheit. The old bugbear of dissolving of the crankcase oil had been proved to be without grounds, because if gasoline were used the oil would be as good as ever after evaporation. Below 20 degrees a more powerful battery and more heat were necessary. Tests covering 200,000,000 miles with a fleet of trucks had also shown that synthetic tires up to 9:00 size are as satisfactory as pre-war natural rubber tires. The smaller tires showed up as better, the larger ones not as good.

Government Interest in Research

Another indication of the federal Government's interest in the industry was an address to the Technical Section by Lorne Gray, associate director-general of the Research and Development Branch of the Department of Reconstruction for the Dominion. He outlined the efforts of the Government to expand and apply the wide variety of research activities now being carried on throughout Canada. He explained that a technical information service had been established at the National Research Council laboratories in Ottawa. Some 300 questions had been received and answered up to the end of 1945. The questions were from manufacturers and others, and were coming in at the rate of 100 a month.

"To ensure that various industries, large and small, have a proper liaison with the many research undertakings in progress throughout the Dominion, technical representatives have been appointed in many areas in Canada," he said. "These representatives have been trained in regard to the facilities and knowledge available for research work in the various government, university and industrial research laboratories."

He added that the work of arranging co-operation in long term research programs had been initiated by his department and that these programs would be co-ordinated with research activities abroad. "To date the action taken by the government to accomplish its aims includes the appointment of technical officers to study specific problems; technical officers to act in liaison capacity for specific areas; and the formation of many other offices."

Of direct interest to the pulp and paper industry, he said, was a plan to co-ordinate and publish some of the research work on "building papers" (known in the trade as vapor barriers) for the construction industry. The material is used on the exteriors of walls and on the interior to lessen vapor transmission through the walls. He said it was proposed to recommend to manufacturers of such papers definite specifications of what the vapor barriers should accomplish.

Hardwood in Newsprint Manufacture

A feature of the annual presentation of awards for meritorious service to the industry was the award of $1,000 by the Ontario Paper Company, of Thorold, Ont., to George Shipman, of the Donnacona Paper Company, Donnacona, Que., for the most practical method devised of using hardwood in newsprint manufacture. This method, it was explained, entails the employment of semi-bleached kraft pulp made from birch in addition to mechanical pulp made from poplar to provide a 40 per cent portion of hardwood usage in newsprint manufacture.

Arthur A. Schmon, president of the company, in handing a check for the amount to the winner, expressed the hope that further research will result in extensive use of Canada's hardwoods, such as birch and poplar, in the manufacture of newsprint, hitherto carried on almost entirely with softwoods such as spruce. If the hardwoods are not cut, he said, they will eventually take possession of the forest itself, and if cut they must be used, "and we must find a method of utilizing them in our industry." Newsprint made according to the method for which the prize was awarded was reported to be of good appearance and printability.

Other awards made included that of the I. H. Weldon Memorial Gold Medal to F. A. Garrett, Canadian International Paper, Three Rivers, for the outstanding technical paper presented at the 1945 annual meeting, and the Technical Section Service Award to J. M. Fear for his work as chairman of the technical committee judged to have done the best work in furthering the interests of the section.

Fine Paper Supply Running Short

G. W. Earnshaw, chairman of the Book and Writing Section, told the delegates that the demand for fine paper during 1946 will continue to exceed the supply, and as a consequence many users would have to defer, for some time at least, part of their purchases until

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TURPENTINE—a readily marketable product—is a by-product of pulp mill digester processing. Failure to recover this crude turpentine from digester vapors may be overlooking a profitable source of additional mill income.

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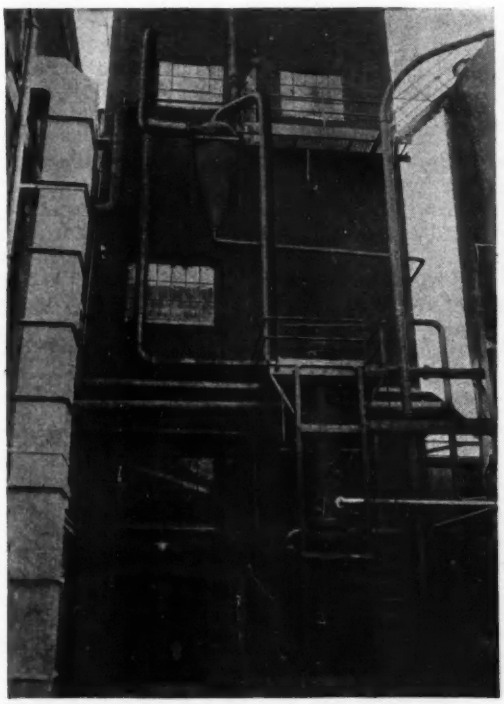

Each day 600 gallons of marketable turpentine are recovered by this unit operating at a Southern pulp mill.

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this type of paper is in more plentiful supply. He added that distributors and consumers of fine paper would be unwise to make commitments unless they were first assured of a supply. Meanwhile the mills were doing their utmost to increase production; in fact, mill output had been pushed to its highest level ever recorded.

Marginal increase in the projected output of newsprint this year had no bearing on the domestic supply of the finer grades of paper, he said, as newsprint mills could not be converted for fine paper production.

The scarcity stemmed, he said, chiefly from the fact that the demand for fine paper in Canada is at its highest level in history, the Government being a large consumer. At present government purchases were declining, but would be retained much higher than in pre-war years.

To help meet the continued scarcity, manufacturers had substantially reduced exports from the peak of two years ago, although the government's policy was to encourage exports. New machines could not be put into operation in less than 18 months, and in order to maintain the present high rate of production the mills for the time being might find it necessary to retain some of the efficiencies attained through the standardization of grades, weights, and colors which permitted the industry to meet wartime needs.

Fine paper would be distributed as equitably as possible both by mills and by wholesalers, in conformity with the directives of the Wartime Prices and Trade Board concerning goods in short supply, and the prospective lifting of controls would not alter the system of quotas now in force.

Appointment of Officers

Aubrey Crabtree, president and general manager, The Fraser Companies, Edmundston, N. B., was elected chairman of the Association for the ensuing year, succeeding R. L. Weldon. Other appointments were:

Woodlands Section.—Chairman, R. G. MacFarlane, of Fraser Companies Limited, Edmundston, N. B.; Vice-chairman, Gordon Godwin, Quebec North Shore Paper Company, Montreal; councillors, C. B. Davis, Abitibi Power, Toronto; G. Harold Fisk, Powell River Paper Company, Powell River, B. C.; F. Faure, Consolidated Paper Company, Montreal; V. E. Johnson, Canadian International Paper, Montreal; M. R. Kane, Price Brothers, Quebec; J. B. Matthews, Provincial Paper Limited, Port Arthur, Ont.; H. G. Schanche, Brown Corporation, Berlin, N. H.; C. C. Atkinson, Fraser Companies, Edmundston.

Ex-officio: B. F. Avery, Great Lakes Paper Company, Fort William, Ont.; W. A. E. Pepler, manager, Quebec Forest Industries, Montreal; W. A. Delahey, manager, Ontario Forest Industries Association, Toronto; and J. O. Wilson, Anglo-Canadian Pulp and Paper Company, Quebec.

Technical Section.—W. H. Birchard, Fraser Companies Limited, Edmundston, N. B.; was elected chairman of the technical section council for the ensuing year. J. M. Fear, Gaspesia Sulphite Company, Chandler, and F. J. Giffen, Canadian International Paper Company, Montreal, were chosen councillors for a three-year term.

Eaton Salesmen Meet

PITTSFIELD, Mass., January 14, 1946—Salesmen from the West Coast offices of the Eaton Paper company have just completed a sales conference.

E. G. MURRAY

St. Regis Sales Names E. G. Murray

E. G. Murray has been named executive vice-president of the St. Regis Sales Corporation, newly-formed subsidiary of the St. Regis Paper Company, 230 Park Avenue, New York City. Mr. Murray will be in charge of the sale of printing, publication and specialty groundwood papers.

Mead Corp. to Close Deal Soon

MACON, Ga., January 28, 1946 — According to Walter T. Cates, secretary of the local Chamber of Commerce, a property deal opening the way to construction of the Mead Corporation's $10,000,000 paper plant here is expected to be completed this week.

To close the deal, according to the Macon "Telegraph," Herbert Kidd, an executive of the firm, was in the city yesterday. Al H. Mahrt, treasurer, was delayed in his trip to Macon from his home office in Lancaster, Pa., when his plane was grounded because of bad weather.

It was pointed out by the Macon Area Development Commission of the Chamber of Commerce that opening of the new plant here will mean an additional annual payroll of one million dollars.

Mr. Kidd, who will be the plant manager, was quoted as saying that the Mead firm plans to start construction on the project as soon as business conditions permit.

To be located in South Macon, the plant will employ 500 to 700 persons, with a larger personnel in the field to supply the necessary timber.

Bliss Buys Home on Nantucket

SPRINGFIELD, Mass., January 14, 1946—Gorham Bliss, president of the Worthy Paper company who placed his concern on the market after employes voted in favor of a union as collective bargaining agent, has bought a place at Nantucket. Bliss visited the island for the first time last week and two days later bought a 10-acre place there. It is one of the "most beautiful spots" that he has ever visited, he said. Negotiations are under way for the sale of the Worthy Paper company to the National Printing company of Thompsonville, Ct. It will probably be several weeks before they are definitely concluded, it is understood.

THE ANSWER

to the request for an unusually powerful moisture attracting agent

is

CORPOLIN

It is a heavy, clear, colorless and odorless liquid; free-flowing; non-volatile; non-poisonous; imparts non-inflammability to paper; compatible with other plasticizers. Corpolin is widely used in the Paper Industry as a plasticizer for many purposes.

We also manufacture

FLEXO 509

an emulsion which is a milder, modified moisture-attracting agent. Paper plasticized with Flexo 509 acquires a permanent leathery appearance and feel. It is compatible with other plasticizers, but not with Corpolin. Flexo 509 is advised when the daily fluctuations of relative humidity of the air should be of little influence on the permanency of moisture content.

Both products are available in tons and carloads. Samples upon request.

THE AKTIVIN CORPORATION

393 Seventh Ave., New York 1, N. Y.

Marathon Announces First Expansion Step

Start of Long-Range Program Will Include New Box Plant At Menasha and New Equipment For Rothschild and Wausau Mills— Thilmany Erecting Addition — Kimberly-Clark Starts Building.

APPLETON, Wis., January 28, 1946—The first step in the long-range plan of Marathon Corporation to provide increased manufacturing facilities at its various plants were announced last week at Menasha, Wis. A new building will be constructed at Menasha to house the carton and folding box units. It will be U-shaped and will be directly across the Fox River from the present manufacturing and office buildings.

Plans call for the erection of the building in six units with construction to begin on two or three units as soon as men and materials become available. When completed, four of the units will house manufacturing operations, and two units will be used for warehousing. Shipping facilities will be provided by trackage between the two wings of the building.

The building will be a one-story structure with basement, constructed of reinforced concrete with a brick or architectural concrete exterior. The overall length will be 810 feet and the overall width will be 340 feet, providing a total floor space of 366,000 square feet when all construction has been completed.

Marathon's program of expansion also includes its plants at Rothschild and Wausau, Wis., and Menominee, Mich. New machinery and equipment will be added as needed to take care of converting the increased pulp supplies which will be available when Marathon's new Canadian mill begins pulp operations later this year.

The present carton manufacturing buildings of the Menasha plant will be occupied completely by the parafilm manufacturing operations of the company when the carton operations are transferred to the new building.

The site of the new building was acquired by Marathon from the Menasha Wooden Ware several years ago in anticipation of the building program. More recently, the corporation has acquired 6.8 acres for further expansion.

Thilmany Erecting New $100,000 Addition

A new $100,000 addition to the asphalt paper converting plant is being erected at the Thilmany Pulp and Paper company at Kaukauna, Wis., and probably will be in operation by June, according to Charles Seaborne, vice-president in charge of manufacturing. The addition will extend the line of waterproof materials put out by the Thilmany company, and stands adjacent to the 1940 expansion unit of the asphalt department.

The present asphalt plant at the mill consists of two buildings, the original plant and an addition. In each building are tremendous rolls of "raw" paper, spools of jute cord from India, vats of hot asphalt, huge rollers and cutting equipment. The plant employs about 100 men.

During the war the asphalt plant had a number of contracts for material such as lead foil, used for cartons, wrapping for medical supplies and similar wrappings; laminated burlap, used by the government for tarpaulins, and others.

The Thilmany plant is said to have the largest asphalt machine ever built. Paper passing over its rollers is 10 feet wide, and when treated, can be cut to the width specified by the buyer, in lots of so many square feet. This is all regulated by a cutter which is dial controlled.

Al Klammer is superintendent of the asphalt department, and Otto Krueger is superintendent of the converting department. The asphalt department is a part of the general converting division.

Kimberly-Clark Breaks Ground

Kimberly-Clark Corporation last week started breaking ground for the new 60 by 220 one-story addition to its Lakeview mill at Neenah, Wis. The addition, which is expected to be completed by fall, will house a modern high-speed crepe wadding machine which is to displace a 40-year-old paper machine.

Walls of the one-story addition at the corporation's mill at Kimberly, Wis., are now up and installation of equipment is expected to start March 1. This addition will have an overall length of 258 feet and is located on the northeast end of the mill. It will supply increased space for experimental and pilot plant work on new products.

A. C. Remley Heads Paper Group

A. C. Remley, Port Edwards, Wis., sales manager of the Nekoosa-Edwards Paper Company, was elected president of the Wisconsin Paper Group at its annual meeting January 19 at the Valley Inn, Neenah, Wis., following a luncheon attended by 62 executives of the 31 member mills located throughout the state.

H. C. Krueger, Neenah, planning director of the Fox River Paper Corporation, Appleton, was elected vice president, Mr. Remley, who succeeded R. H. Purdy, of Tuttle Press, Appleton, as head of the Group. Leo O. Schubart, Neenah, secretary-treasurer of the Neenah Paper Company, was reelected secretary-treasurer of the Paper Group.

Reelected to the executive committee were F. C. Heinritz, Appleton Coated Paper Company; C. W. Hoeper, Peshtigo, Badger Paper Mills, Inc.; J. D. Young, Menasha, Edgewater Paper Company; W. I. Thornton, Jr., Neenah, Kimberly-Clark Corporation; R. J. Sund, Neenah, Marathon Corporation; A. J. Schierl, Stevens Point, Whiting-Plover Paper Company, and Mr. Purdy, retiring president who automatically serves on the committee for one additional year.

H. D. Wake, Wisconsin Rapids, traffic manager of the Consolidated Water Power and Paper Company was elected to serve on the committee.

Irwin Pearson, Menasha, executive secretary, was retained in that capacity. The Wisconsin Paper Group has its office and warehouse at 411 Garfield avenue, Menasha. It is a non-profit organization for providing scheduled pool carload delivery services to the customers of the Wisconsin paper manufacturers and converters.

Canadian Newsprint Profits $4.40 a Ton

Cost Calculations With Mills Operating At 86 Percent of Capacity Reflect Improved Average Profit Position With Newsprint At $67 A Ton—K.V.P. Co. Buys Interest In Appleford Paper Products.

TORONTO, Ont., January 28, 1946—The average Canadian newsprint company this year will have net profits available for distribution to security holders of approximately $4.40 per ton of production, according to a survey of the industry made by The Financial Post, Toronto. The study also makes possible, for the first time since the outbreak of the war, an estimate of production costs for the average Canadian newsprint mill.

On the basis of these cost calculations, says the Post, and figuring operations at 86% of capacity, publicly held newsprint mills this year will fully earn their preferred dividends and have a further ten million dollars available for common shareholders. It is pointed out that the current market valuation of the common stocks of listed newsprint companies is approximately $140,000,000 or 14 times prospective 1946 earnings.

Here is the picture, on a per ton basis, as seen by the Post:

OPA price (U. S. funds)	$67.00
Less: Freight charges	8.00
Balance	59.00
Add: Exchange premium	5.90
Net price (Candi, funds)	64.90
Less: Pulpwood costs	23.00
Power	6.00
Labor	6.50
Materials	7.50
Deprecn. & depletion	5.00
Miscellaneous	5.00
Available for interest, taxes, divds.	11.90
Less: Interest charges	3.00
Taxes	4.50
Available for dividends	4.40

While these estimated costs reflect the expected position of the average newsprint producer, obviously individual costs will vary considerably between mills. Pulpwood and labor costs particularly will probably show divergence, as will the conversion item. The effect of taxes on earnings will differ according to standard profits, but it has been assumed that they will average 50% of earnings after depreciation, depletion and interest charges. The cost calculation set forth in the table does not allow for any change in the current newsprint price of $67 per ton, U. S. funds, or in the premium on U. S. funds.

Canadian mills are not active in the present efforts to get a higher U. S. price. However, there is nothing in present Canadian contracts to prevent a further price increase in 1946. The January 1 price was set at $67 "until further notice", in all contracts. Should U. S. price controls on newsprint be removed this year, it is believed fairly certain that U. S. mills will increase their prices, and Canadian mills follow.

The old fear that too high prices would bring about a rush of new mill construction, is not causing so much concern in the industry at the moment. Mills at present are unable to get deliveries of some machine parts for replacement before next December, and can't hope for deliveries on other types of equipment for two years. It would require at least two years to build a new mill, and get it started—and in two years' time, the present world shortage situation may well be changed considerably.

It is probable, however, that there will be some increase in world productive capacity in the next few years. It is believed likely that another mill will be erected on the Pacific coast, to fill growing needs in that area. Also, new mills may develop in Brazil, perhaps in Russia.

Pulpwood Key to Newsprint Output

Key to total newsprint production in 1946 is pulpwood supply, and developments in this direction so far have been favorable, although the National Employment Service is still advertising for thousands more men for the woods. There are now more men in the woods than last year and the open season has been favorable. Recent snows in central Canada have come at the right time to help in moving the wood. Providing weather conditions remain favorable, such as at the time of the spring break-up, there probably will be at least the 10% increase in wood cut, which is being counted on for scheduled gain in newsprint this year.

Abitibi Meeting Set for March 15

New Abitibi securities will be ready for distribution before June 1, the date the next coupon is payable on the new bonds, if the bondholders' meeting approves the plan of reorganization, the committee now hopes. The long-awaited meeting of Abitibi Power & Paper Co.'s bondholders on the reorganization plan will be held March 15, in Toronto. This date was set by the court this week and notices of the meeting will be sent bondholders this week, it is understood.

K. V. P. Buys Powell Holdings

Kalamazoo Vegetable Parchment Co. of Kalamazoo, Mich., has purchased the financial holdings of the late W. B. Powell in the Appleford Paper Products, Ltd. of Hamilton, Ont. Plans are under way to expand present facilities with new buildings and equipment as soon as possible. Policies of Appleford will remain unchanged, it is stated. The products converted by Appleford are similar to those manufactured by the Kalamazoo company. It is expected the line of converted paper products will be extended and enlarged and that Appleford will make available to the Canadian market all the specialty papers now manufactured by the Kalamazoo company. Appleford has factories in Hamilton, Ont., and Montreal, Que., and branch offices across Canada. At a recent board meeting the following officers were elected: R. A. Hayward, chairman; George F. Clark, president and general manager; Ernest Smith, vice-president and factory manager; Miss Marion Grayson, treasurer; C. S. Glassco, assistant treasurer; James Campbell, secretary.

Pulpwood Movement Waits on Weather

PLYMOUTH, N. C., January 16, 1946—Although the North Carolina Pulp Company here has resumed operations after a 10-day suspension during which the machinery in the $8,000,000 plant was thoroughly overhauled, continuous operation of the plant appears somewhat doubtful for the present because of the acute shortage of cordwood and the continued uncertainty of weather conditions for the next several weeks, reports Resident Manager D. B. Kuhe. Actually on the yards here this week was about 4,000 cords of wood, or less than a week's supply.

As one company official commented: "From one end to the other of the territory from which the company draws its cordwood it is the same story—trucks are bogged down and there is nothing that can be done about it until the weather clears long enough to dry the woods."

In a special dispatch to the Raleigh News & Observer, the Plymouth correspondent said: "Mr. Kuhe dissents with considerable vigor from any notion that the pulpwood famine is in any sense or degree attributable to any sitdown strike on the part of the smaller land owners who have been supplying the plant with a part of its raw material.

A.W.P. Elects Payson

HOLYOKE, Mass., January 14, 1946—Arthur H. Payson of Norwich, Conn., president of the American Thermos Bottle company of that city has been elected a director of the American Writing Paper corporation, it was announced today by Thomas H. Blodgett, chairman of the board. Other Eagle A directors are: Blodgett, Leon M. Yoerg, Edward C. Reid, Peter Freedman, Lysle E. Pritchard and George E. Warren.

Obituary

Karl A. Lefren

Karl A. Lefren, mechanical engineer and well known in the paper industry as a specialist in power plant problems, died January 24, 1946, at his home at 270 Orchid Terrace, Bogota, N. J., where he was associated with the Federal Paper Board Company. For some years he was chief engineer with the Robert Gair Company and later had offices at 171 Madison avenue, New York, as a consulting engineer.

Surviving are his widow, a son K. Edward Lefren and a daughter Mrs. T. Gordon.

Frederick J. Larock

Frederick J. Larock, 81, of 109 Somona road, Squantum, Mass., died suddenly at his home recently. Before his retirement 20 years ago, he was a foreman at the Taylor-Atkins Paper company of East Hartford, Conn.

John Crowley

John Crowley, for 25 years a production man for the Package Machinery Company, Springfield, Mass., and one-time minor league baseball pitcher, died recently at St. Petersburg, Fla., according to word received in this city.

Andrew W. Peterson

Andrew W. Peterson, 75, father of Magnus F. Peterson of Longmeadow, treasurer of the U. S. Envelope company, died January 12 in Worcester, Mass., following an operation.

IN THIS DAY OF VICTORY! ***WE LOOK FORWARD WITH CONFIDENCE TO A FUTURE IN WHICH PEACE SHALL ABIDE.***

DURING OUR 117 YEARS OF CONTINUED SERVICE TO THE PAPER MILLS AND THE PAPER INDUSTRY

OUR HIGH PURPOSE HAS BEEN

To work with each individual customer through improved design and application to increase quality and production in their particular product.

TODAY—Our Engineering Department Available Manpower and Materials Are At Your Service for Reconditioning or Expansion of Your Equipment.

PAPER MACHINES—JORDANS
PAPER BAG MACHINES
NEW MODEL "E" PAPER MILL TRIMMER

THE SMITH & WINCHESTER MANUFACTURING COMPANY

PLANT AND OFFICES AT SOUTH WINDHAM, CONNECTICUT

James W. Hagar Retires

DALTON, Mass., January 29, 1946—James W. Hagar, one of three generations of papermakers, has retired as general superintendent of Crane and Company, paper mills in Dalton. Mr. Hagar was born in Dalton, January 5, 1883, in the brick house adjacent to the Crane office. He attended the Dalton grammar school and spent three years in high school. He attended Williston Academy in 1901-1902 where he was captain of the football team. He graduated from Yale in 1905 where he was enrolled in the Sheffield Scientific School. In July of 1905 he entered the employ of the Western Electric Company in New York City. He was transferred to the Atlanta branch in October 1906 as assistant chief clerk.

He entered the employ of Crane and Company, Inc., March 12, 1907 and worked through the different departments of the mills for two years. In 1909 he was made assistant to William S. Warren, general superintendent of the mills. In March of 1913 he was transferred to Westfield where he was superintendent of the Crane Bros. mills. He returned to Dalton in December of 1921 and succeeded Mr. Warren, who retired that year as superintendent of the Pioneer, Old Berkshire and Government Mills. In 1942 the Bay State Mill was added to the mills over which he was superintendent.

While in Westfield, Mr. Hager was active in the Y. M. C. A. and the church and was chairman of the first War Loan conducted there. He was county representative for the Westfield American Red Cross. On November 7, 1918 he was commissioned Captain in the Ordnance Department at Camp Devens and served in Washington.

His maternal grandfather, James Wilson, worked for Crane and Company from 1820 to 1850. At the age of 17 his grandfather started his apprenticeship with Zenas Crane the founder of the original business. He worked his way up and was superintendent of the Government and Bay State Mills. Mr. Hagar's father worked for Crane from 1868 until February 1907. He was foreman of the finishing room at the Government Mill.

On June 8, 1909 Mr. Hagar married Mary E. Gamwell of Pittsfield who died December 24, 1928. In August 1931 he was married to Agnes Farley Blanchard. Mr. and Mrs. Hagar are moving to Kent, Conn. where they have bought an old Colonial homestead. Mr. Hagar has been given several farewell parties.

Gould Employs More Vets

Three more ex-servicemen have been added to the Reinhold-Gould sales and service staff, by President Harry E. Gould. Named were former Army air forces major, Elwood Lippincott, Army sergeant-major, William Fink, and Army staff sergeant, Edward Cornachia.

The Reinhold-Gould policy of creating jobs for veterans was described as "in keeping with the best interests of both business and the country" and the practice of training new help and retraining the old called a "continuing process". Altogether six ex-servicemen have been added to the Reinhold-Gould organization.

Lippincott is new to the industry and is participating in a specialized "on-the-job training program." Fink and Cornachia, both of whom were employed in the paper merchandising field before joining the Army, are in service and order department positions respectively. Fink was formerly employed at Shapiro Paper Corporation and Saxon Paper Company. Cornachia was associated with Henry Lindemeyr and Sons.

TO MEET PEACETIME PRODUCTION REQUIREMENTS

STICKLE DRAINAGE & CONTROL

● Stickle Control combines with Stickle Drainage increased production volume, assures quality improvement with greater uniformity, and decreases cost of steam.

These advantages are attained with positive and rapid circulation of steam through dryers with rapid removal of condensate and air: maintenance of heat at correct drying temperatures with desired moisture content; and by reducing waste through decreased back pressure and by-passing.

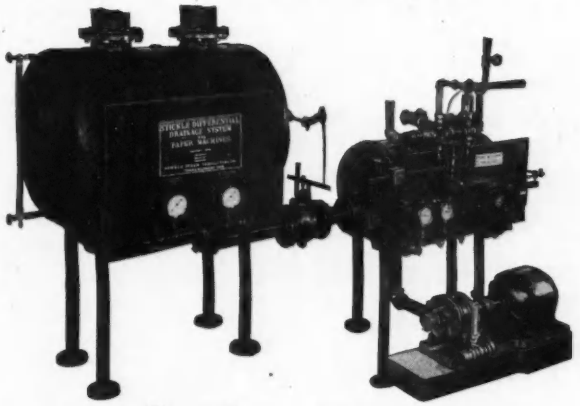
Stickle Automatic Control may be had with either Stickle Individual Trap Drainage or Stickle Differential Drainage. Visible operation is included with either type of drainage.

The new Stickle Bulletin for Paper Mills illustrates and describes the various Stickle Elements from which complete drainage and control systems are constructed and adapted to meet specific operating conditions. Also other cost-reducing equipment.

THE STICKLE LINE

- Differential Drainage System
- Differential Boiler Return System
- Combined Flash and Receiver Trap
- Automatic Steam Control
- Automatic Tension and Thermal Attachment
- Visible Micro Adjustable Orifice
- Sight Feed Flow Regulator and Sight Glasses
- Vacuum Blast Coil Heater
- Heat Reclaimer
- Open Float Steam Traps
- Open Coil Feed Water Heaters and Other Specialties

Ask for your copy of new Stickle Bulletin for Paper Mills, No. 160



Flash Tank and Pumping Unit of the Complete Stickle Differential Drainage and Boiler Return System. Differential drainage with differential boiler return affords extra savings in steam cost to mills operating at higher pressures.

Stickle

STEAM SPECIALTIES COMPANY

2215 VALLEY AVENUE • INDIANAPOLIS, INDIANA

Tyrone Mill Rewards Safety

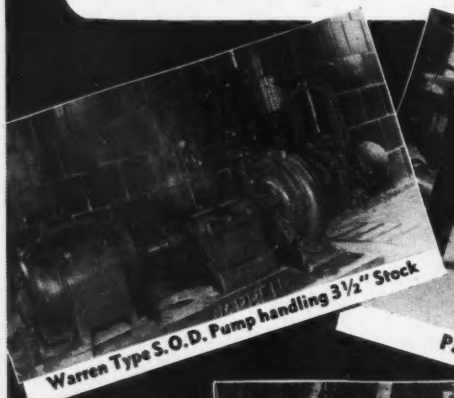
TYRONE, Pa., January 22, 1946—Several departments of the Tyrone paper mill that have gone for the past six months without a lost-time accident were tendered a dinner and entertainment at the Moose dining hall last Thursday evening.

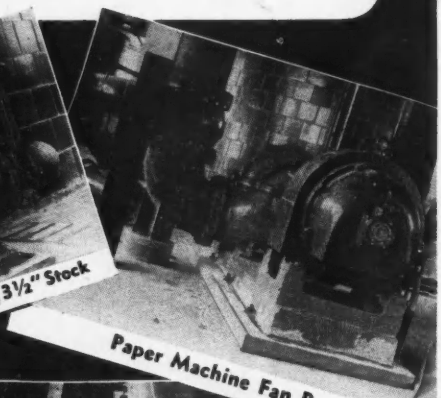
Robert K. Meredith, chairman of the paper mill safety committee, was master of ceremonies and extended greetings. Mr. Meredith said the management and the safety committee welcomed all to this semi-annual dinner, which was given as a reward to those departments completing six months without a single lost-time accident.

The departments honored are: Construction, carpenters and bricklayers; machine, blacksmith, welding, carpenter and tin shops; painters, pipe shop, power house, electricians, Nos. 2, 3 and 4 machine rooms, Nos. 1 and 2 beater, drainer and wheelwright rooms, Nos. 3 and 4 beater, size and clay rooms, cutter room, finishing room, pulp and paper testers, evaporators, rotary and bleacher rooms, lime plant, watchmen and truck drivers on the outside department.

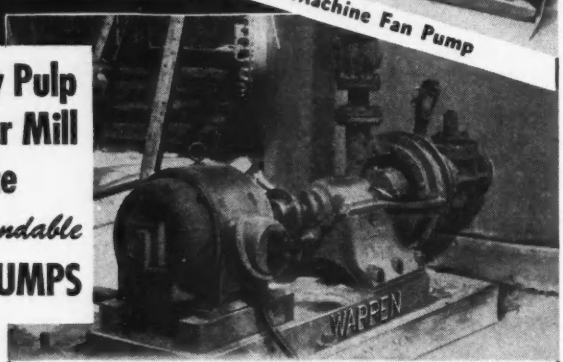
FLORIDA PULP and PAPER COMPANY
Depends upon
WARREN PUMPS

for important services at their modern mill at Pensacola, Florida, which was completed in 1941 and which was designed and built to make bleached and unbleached specialty papers. Original equipment included fifty-four Warren Pumps and several others have since been added — all giving on-the-job dependability with economical operating and maintenance costs.


Warren Type S.O.D. Pump handling 3½" Stock


Paper Machine Fan Pump

for every Pulp and Paper Mill Service
Specify Dependable
WARREN PUMPS



Pump for weak liquor to recovery room

WARREN STEAM PUMP CO., INC.
WARREN, MASSACHUSETTS

Mead Registers Stock

The Mead Corporation registered 7,000 shares of $5.50 cumulative preferred stock, Series B, with warrants for the purchase of common stock (Series of 1937) attached, and 14,000 shares of no-par value common stock.

These securities, the company's prospectus said, are to be exchanged for outstanding shares of the $50 par value common stock of Columbian Paper Company, Buena Vista, Va. The company will offer to all holders of common stock of Columbia one-half share of the $5.50 cumulative preferred, with common stock purchase warrants attached, and one share of its no-par value common for each share of Columbian common.

N. Y. Forestry Luncheon

The annual luncheon of the Pulp and Paper Alumni of the New York State College of Forestry will be held Tuesday, February 26th, at 12:15 noon in the South Room of the Commodore Hotel. Formal announcements are being sent to all Alumni who are on the mailing list. Those not receiving an announcement who plan to attend the TAPPI Convention or be in the vicinity at that time, should advise Thomas M. Cook, Chairman, at 7 Hanover Square, New York 5, New York.

Avery Leaves Diamond

MENTOR, Ohio, January 28, 1946—Julian M. Avery has resigned as vice-president in charge of research and development of the Diamond Alkali Company to establish a private consulting practice with headquarters temporarily at his home address, Chillicothe Road. Among other activities Mr. Avery will cooperate with Arthur D. Little, Incorporated, consulting engineers of Cambridge, Mass., in the further development of inventions assigned to them during his previous employment by that organization.

Continental Buys Filer

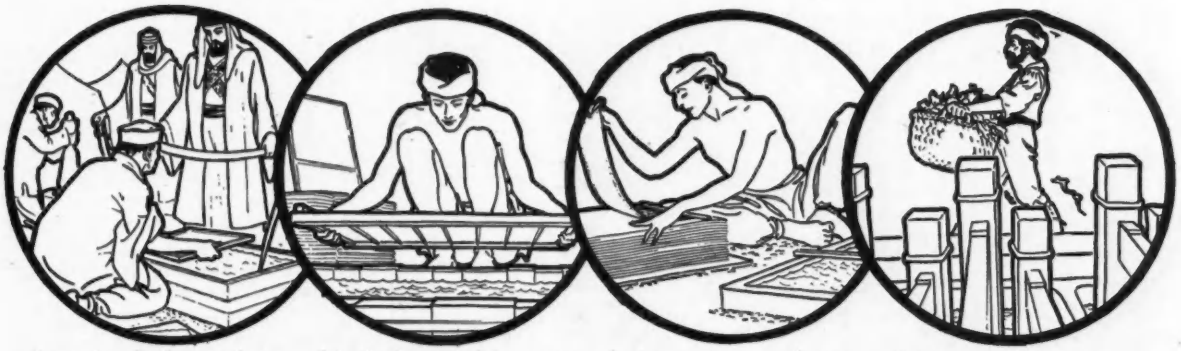
FILER CITY, Mich., January 28, 1946—The Filer Fibre Company, manufacturer of kraft pulp and paper, was purchased by Continental Can Company today. Continental intends to utilize Filer's full production immediately. The present management will be retained and continue under the direction of Hans A. Eggers, vice-president in charge of Continental's paper and plastics divisions.

NEARLY 2000 YEARS AGO in China, Ts'ai Lun first discovered and developed the paper-making process.

Paper

PACEMAKER OF PROGRESS

Mulberry bark or rags were mashed, mixed with water, poured over a screen, dried.



Seven hundred years later, the Arabs forced the secret from some Chinese captives.

The Arabs carried the secret of paper-making to Bagdad ... whence it reached Cairo.

A thousand years after its discovery—this valuable art first appeared in Morocco.

When use of the process arrived in Spain, rags were pulped in a stamping mill.

It took 200 years for a knowledge of paper-making to spread through France, Italy, Germany, Holland, and England. The quality of hand-made paper improved and its uses steadily increased, but the basic method of making paper remained unchanged. It was still another 200 years before William Rittenhouse erected, at Germantown, Pennsylvania, in 1690, the first paper mill in America. The following century saw 100 mills operating in the Colonies.

Nearly 17 centuries passed while a knowledge of paper-making travelled from its birthplace in China to the New World. Yet in only a little more than 75 years since the introduction of the wood-pulp process and the development of the felt industry in the United States, plentiful paper has helped to revolutionize culture and civilization. This dramatic story is graphically told in the forthcoming sound-color film "Paper—Pacemaker of Progress," presented as a tribute to the paper industry by F. C. Huyck & Sons on its 75th Anniversary.

F. C. HUYCK & SONS

Kenwood Mills

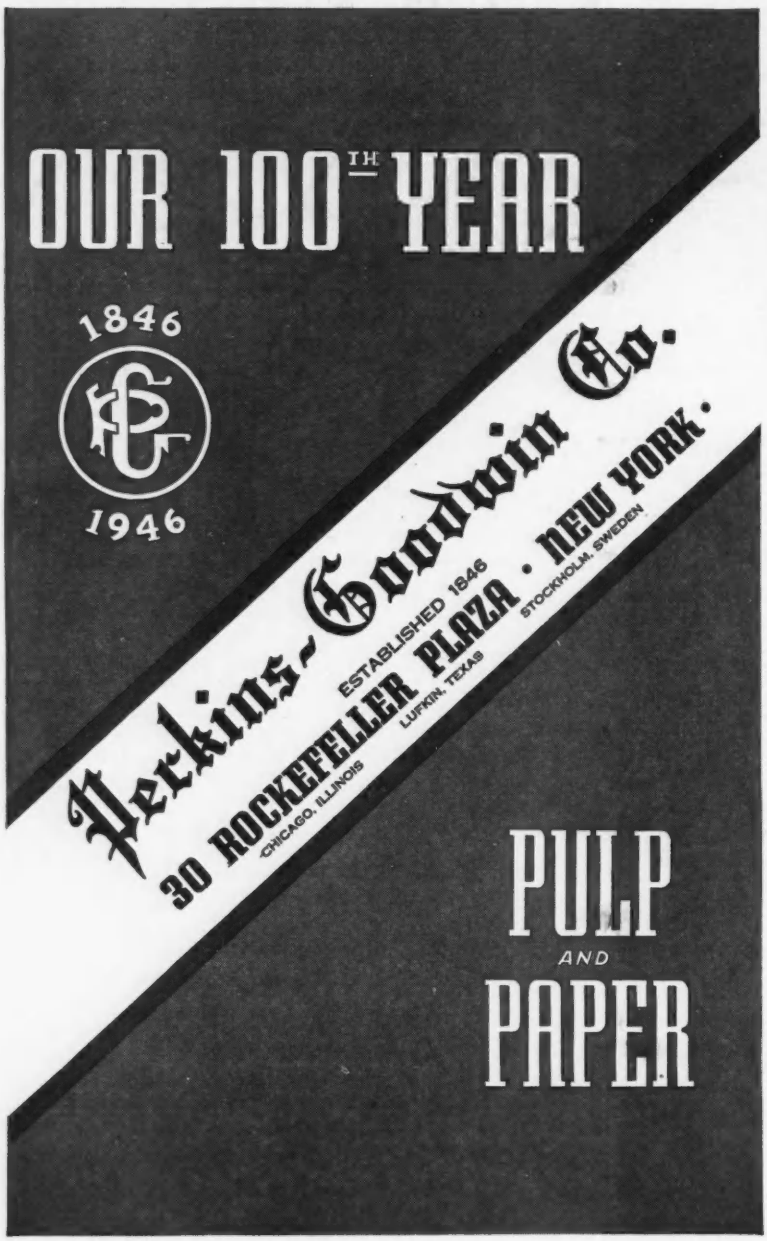
Albany New York

KENWOOD WOOL PRODUCTS

Pulp Consumers See Threat

Commenting on an Associated Press dispatch from Stockholm in which Einar Flygt, Vice President of the Swedish Cellulose Company, was quoted as predicting the virtual elimination of wood pulp exports to the United States unless OPA ceiling prices are increased, C. V. Maudlin, Secretary of the Association of Pulp Consumers, Incorporated, deplored this action against American consumers, which is threatened because of a price situation resulting from the efforts of the United States Government to prevent inflation. He added that hundreds of paper mills, many in small communities in this country, are dependent on the market wood pulp supply, and warned of the consequence of a shortage on the operation of these mills and the already inadequate supply of paper and paperboard.

At the same time Mr. Maudlin declared that purchasers of wood pulp for conversion into paper cannot be expected to bear a further increase in the cost of their basic raw materials unless they are permitted to raise paper prices by a compensatory amount. If OPA finds that a wood pulp price increase is necessary in the interests of maintaining market wood pulp supplies from Sweden, as well as from the American Continent, he urged that a concurrent increase be authorized for paper and paperboard prices to avoid placing an intolerable burden upon the paper mills which depend on purchased wood pulp.



Keith Raises Wages

TURNERS FALLS, Mass., January 21, 1946—A wage increase of six and seven cents an hour for approximately 300 employes of the Keith Paper company was disclosed at the eighth annual banquet of the International Brotherhood of Papermakers, held at the Turners Falls Inn. Effective at once, the wage increase will consist of seven cents an hour for those receiving 69 cents an hour or under and six cents an hour for those receiving 70 cents or over.

Paul E. Hodgdon, president, in making the announcement, reminded the workers that the raise was voluntary on the company's part and would cost approximately $50,000 a year.

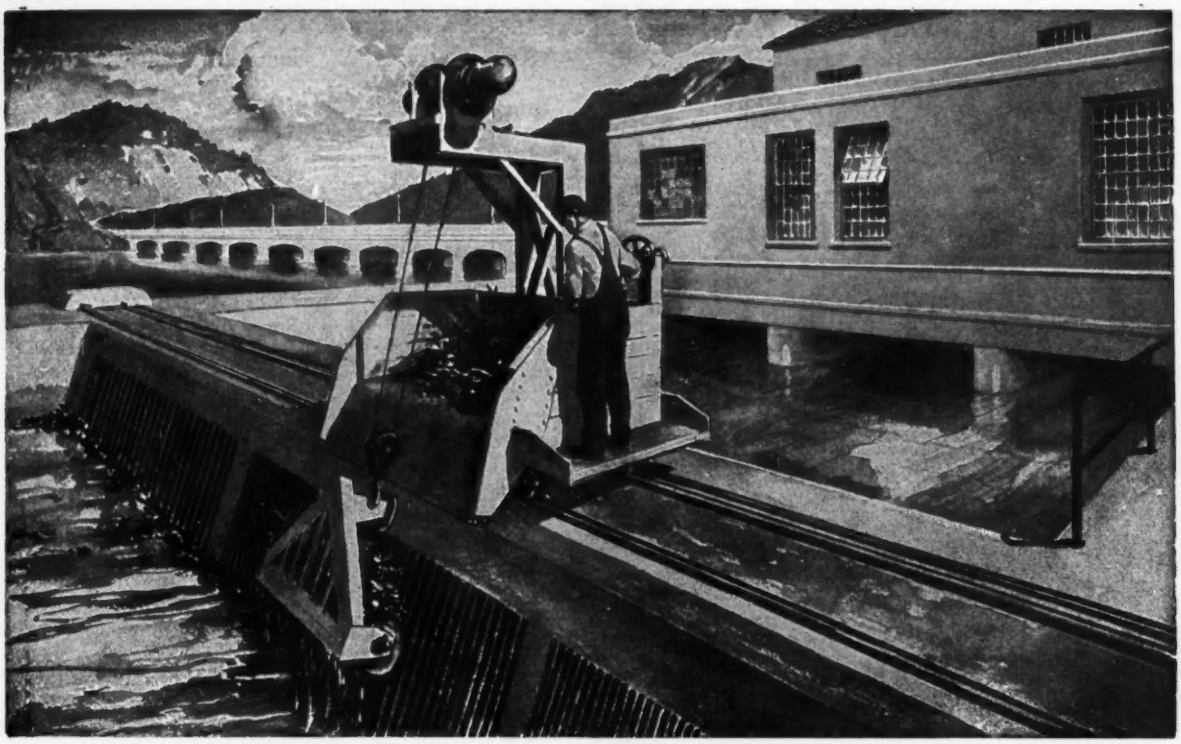
Officers for the brotherhood installed for the coming year were Fred Stroble, president; Carl Hoynoski, vice-president; Rose LeMaire, recording and financial secretary and Lorraine Belmore, treasurer.

Payne with Stein, Hall

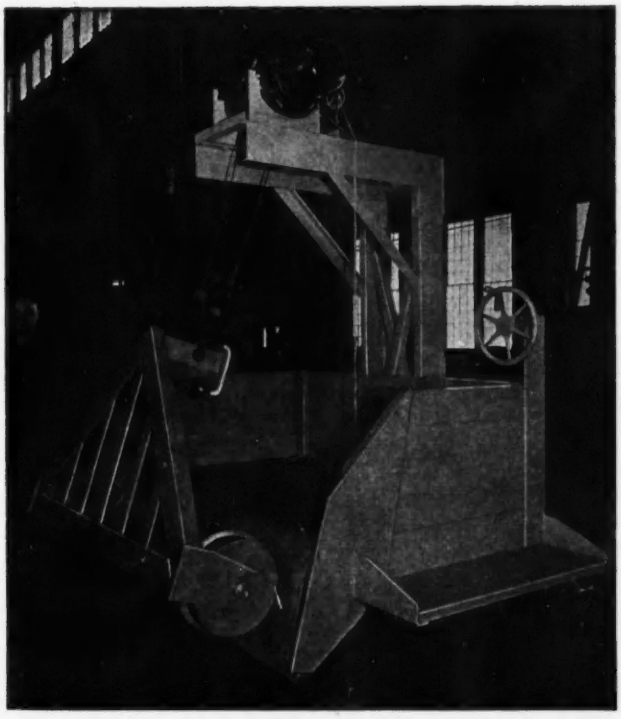
Raymond J. Payne of Kannapolis, N. C., who during five years of Army service rose ten grades from buck private to major, has joined the Charlotte Branch office sales staff of Stein, Hall & Co., Inc., New York, manufacturers and suppliers of starches, gums, dextrines and specialty products used by the textile and many other industries, and importers and distributors of burlap and other commodities. Mr. Payne is a textile engineering graduate of North Carolina State College, class of 1940, and gained considerable experience in textile mills during the summers of his college career. He volunteered for Army service in October, 1940.

Sheppard Celebrates

WORCESTER, Mass., January 14, 1946—Twenty-five years of service in the envelope industry was celebrated by the Sheppard Envelope Company on Saturday evening, January 12th. A two-day combination of sales conference, banquet, awarding of watches to twenty-five year veteran employes an dten, fifteen and twenty year service pins, climaxed the activities on Saturday evening.



LEONARD Trash Rack Rake



A VITAL piece of equipment in any water power plant or pumping station. Eliminates loss of power by reducing head losses through the rack by keeping intakes clear.

Simple in design and construction, yet positive in action, the Leonard Rake consists of a series of teeth mounted on a tubular axle, with wide, heavy wheels. The teeth ride over obstructions on the downward course, and turn, in reverse, to rake the rack clean of submerged or floating debris and deposit it in a trash car, when raised. Keeps intakes clear and eliminates loss of head due to clogged racks.

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Put It Up to Us!

S·MORGAN SMITH COMPANY
·YORK· PENNSYLVANIA · U·S·A·

POWER by SMITH

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending January 26, 1946

STOCKS

	High	Low	Last
A. P. W.	10½	8¾	10¼
Armstrong Cork Co.	59½	56¼	57
Celotex Corp.	25	23¼	24½
Celotex Corp., pf.	21¾	20¾	21¼
Certain-Teed Products Corp.	17⅞	15½	17⅜
Certain-Teed Products Corp., pf.	...	...	...
Champion Paper & Fibre Co.	48	47	48
Champion Paper & Fibre Co., pf.	...	...	...
Congoleum Nairn Co.	36	34¾	35
Container Corp. of America	42⅞	39½	42½
Continental-Diamond Fibre Co.	16¼	15	15¾
Crown-Zellerbach Co.	30¼	29	30¼
Crown-Zellerbach Co., pf.	108½	107	108¼
Dixie Cup Co.	49½	46	49½
Dixie Cup Co.—A	55½	54½	55½
Flintkote Co.	38⅝	35½	37⅞
Flintkote Co., pf.	115	112	112
Robert Gair	10⅞	9¾	10½
Robert Gair, pf.	19¾	19⅛	19¾
International Paper Co.	46	42¾	45⅞
International Paper Co., pf.	122	118¾	121
Johns-Manville Corp.	146	142	146
Johns-Manville Corp., pf.	141½	141½	141½
Kimberly-Clark Corp.	65⅞	65½	65½
Mac Andrews & Forbes	42¼	41⅛	42
Mac Andrews & Forbes, pf.	...	...	...
Masonite Corp.	61¾	58¾	60
Mead Corp.	24	22	24
Mead Corp., pf. A—6%	107¼	107¼	107¼
Mead Corp., pf. B—5½%	106½	106½	106½
National Container Corp.	28⅝	27½	28⅛
Paraffine Companies, Inc.	80½	78	80½
Paraffine Companies, Inc., pf.	109½	109½	109½
Rayonier, Inc.	27½	24⅜	27¼
Rayonier, Inc., pf.	37¾	37⅛	37¾
Ruberoid Co.	48½	47¼	48½
Scott Paper Co.	54¼	53	53¼
Scott Paper Co., pf.	114	112⅝	114
Sutherland Paper Co.	40	38	40
Union Bag & Paper Corp.	24⅞	23¼	24⅞
United Paperboard Co.	12½	12	12¼
U. S. Gypsum Co.	115⅛	112½	113½
U. S. Gypsum Co., pf.	200	200	200
West Virginia Pulp & Paper Co.	40	37	40
West Virginia Pulp & Paper Co., pf.	114	113	114

BONDS

Abitibi Pulp & Paper Co. 5s '53	106¼	106	106
Celotex Corp. 3¾s '55	...	...	...
Certain-Teed Products Corp. 5½s '53	...	...	...
Champion Paper & Fibre Co. 3s '65	104¾	104¾	104¾
International Paper Co. 6s '55	106	105⅛	106
International Paper Co. 5s '47	103⅜	103⅛	103⅛
Mead Corp. 3½s '53	...	...	...

New York Curb Exchange

High, Low and Last for Week Ending January 26, 1946

STOCKS

	High	Low	Last
Great Northern Paper Co.	44¾	43	43½
Hummel-Ross Fibre Corp.	13⅜	12¾	13
St. Regis Paper Co.	11⅛	10⅜	11
St. Regis Paper Co., pf.	...	...	...
Taggart Corp.	9½	9¼	9¼

BONDS

American Writing Paper Co. 6s '61	103¼	103	103¼

Celotex Nets 57 Cents

Consolidated net income of the Celotex Corporation for the fiscal year ended on October 31, 1945, was $605,525, equal after preferred dividend requirements to 57 cents a share on the common stock, comparing with $562,276, or 53 cents a share, in the preceding year, the report issued yesterday announced.

Profit was after $268,910 amortization of emergency war facilities, less related claims for refund of income taxes, and after $175,226 write-off of redemption premium and unamortized discount and expense of twelve-year 3¾s retired during the year.

Bror Dahlberg, president, reported that the backlog of orders is at a record level. Current assets on Oct. 31 were $12,757,376, and current liabilities $2,499,842. Earned surplus was to $3,954,191.

Paraffine Companies Report Loss

The Paraffine Companies for the quarter ended December 31 report a net loss of $287,106, against net profit of $570,884, or $1.14 a common share in like quarter of 1944.

Finch, Pruyn & Co. Elect Officers

GLENS FALLS, N. Y., January 28, 1946—The annual meeting of stockholders of Finch, Pruyn & Co. was held last week at which directors and officers for the year were chosen. All previous officers were re-elected with the addition of Lyman A. Beeman as vice president. The reelected officers are Maurice Hoopes, president; Samuel Pruyn, vice president; H. F. Bullard, vice president and secretary, and F. B. Chapman, treasurer. Louis P. Brown, H. E. Foulds and N. M. Howe were reelected directors in addition to the officers.

Approval of a pension plan for the employes was given during the meeting which is to become effective from January 1, 1946. The plan has been under preparation for some time and is non-contributory, inasmuch as the cost is to be paid by the firm. The pension plan provides for retirement of all employes when they reach 65 years of age and credits them with all years of their service to such time, with the exception of the first five years. Social Security payments will be additional to those provided by this plan and will not be affected by the plan. The latter includes a provision for pensioning employes who become totally and permanently disabled in service. Funds appropriated by the company for the benefit of retiring employes will be held by the trustees and will not thereafter be subject to control of the firm. The plan must be approved by the government and will cover all employes.

Allied Mills Nets $435,521

Stockholders of the Allied Paper Mills, at a recent meeting, re-elected all directors and heard reports from Dwight R. Curtenius, president, of a highly satisfactory year's operations. The place on the board of directors left vacant by the death of Henry Vanderhorst was not filled.

There was not a quorum of directors present, so that group's session for the election of officers was postponed until Feb. 19, the date of the monthly meeting. Directors re-elected are A. B. Connable, Jr., Miss Blanche Hull, George E. Monroe, S. B. Monroe, Frederick C. Fischer, Dwight R. Curtenius, Paul H. Todd, Lewis W. Kirby and E. G. Read, Jr.

Curtenius' report showed total current assets of $3,650,945, total current liabilities of $269,529, and total net worth of $5,140,164. Sales during 1945 amounted to $9,539,881. Net income before federal taxes on income amounts to $980,159, which with federal income and excess profits tax deductions left a surplus net income of $435,521, compared to $417,841 for 1944.

Crystal Tissue Earns 86 Cents

The Crystal Tissue Company for 1945 reports a net income of $100,200, equal to 86 cents each on 93,000 common shares, against $97,751 or 84 cents a share the year before; net sales, $2,840,472, against $2,661,546.

Rayonier Declares Dividend

Directors of Rayonier Incorporated have declared the regular quarterly dividend of 50c per share on the $2 dividend cumulative preferred stock, payable April 1, 1946, to stockholders of record March 14, 1946.

JUST SAY CRANE . . .

For Everything In Piping Materials

For this typical 2-boiler hook-up, for example—from boiler outlets to headers to steam service lines—all the piping materials are available from Crane. All the valves, fittings, fabricated piping, pipe, and piping accessories can be secured—on one single order—from your Crane Branch or Wholesaler.

Whether you need piping equipment for power or process lines, for moderate or severe working conditions, selecting it from the complete Crane line gives you this three-way advantage:

ONE STANDARD OF QUALITY
ONE RESPONSIBILITY
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Simplified buying with undivided responsibility means time-saving, trouble-free installations. Uniform Crane quality in every part of piping systems, gives assurance of smooth-working, low-cost piping performance.

CRANE CO., General Offices: 836 S. Michigan Ave., Chicago 5, Ill.
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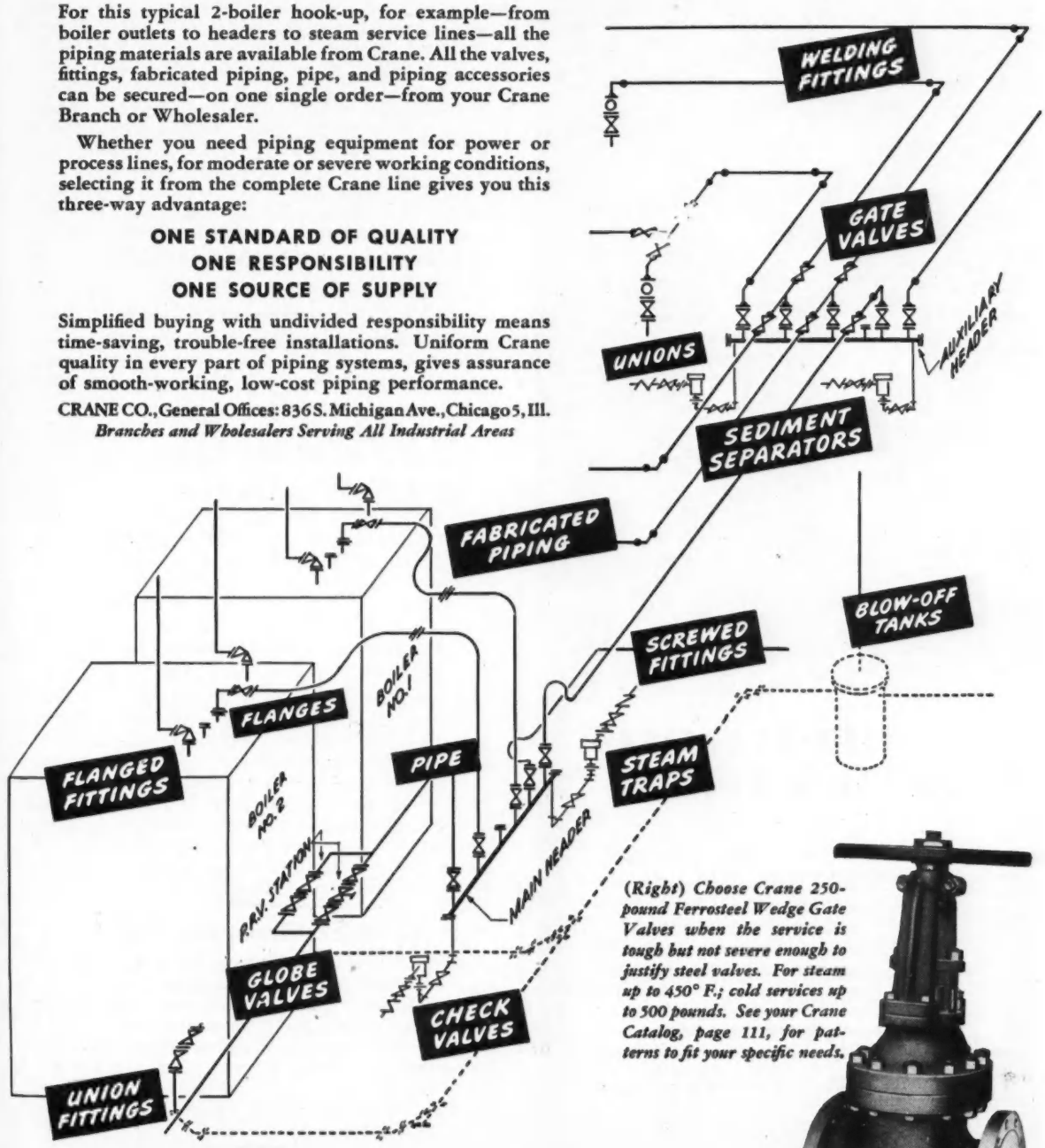

(Right) Choose Crane 250-pound Ferrosteel Wedge Gate Valves when the service is tough but not severe enough to justify steel valves. For steam up to 450° F.; cold services up to 500 pounds. See your Crane Catalog, page 111, for patterns to fit your specific needs.

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VALVES • FITTINGS
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DELIVERIES EASIER ON BAUER PULPERS

"That's right, John. Deliveries really are improving, and we say that despite the recent step-up in orders. Bauer pulpers ordered now will go forward reasonably soon—and that's a lot better than we could do in '44 and '45."

Yes, Bauer pulpers are in demand and are being installed to

Salvage and turn screen rejects into A-1 stock.

Develop greater freeness and raise the mullin and tear on semi-chemical other stocks.

Two sizes, 36" and 24" disc, in full range of plate patterns.

Bauer
THE BAUER BROS. CO.
SPRINGFIELD, OHIO

Sandy Hill Holds Annual Banquet

HUDSON FALLS, N. Y., January 21, 1946—The annual banquet of the Sandy Hill Iron and Brass Works was held this week and attended by several hundred employes. Walter Juckett, secretary and assistant treasurer of the firm, who recently returned from service, presided as master of ceremonies. He introduced his father, Frank A. Juckett, president, who welcomed the assembly and referred to the fact that in a few weeks he will celebrate his tenth year with the firm. Philip J. Riley, treasurer, introduced the guests present, including Almon A. Johnson, designer of the Johnson stern anchor handling gear which the firm manufactured during the war. Others introduced to the gathering were Ramire Garza, of Monterey, Mex., who is here studying papermaking while the firm is setting up a paper mill factory in that country; C. W. Kellogg, Arthur E. Bell and Dr. Lester Huested, company physician. Mr. Johnson commended the assistance that his firm received from the local concern during the war emergency.

Jones Pay Scale is Raised

PITTSFIELD, Mass., January 15, 1946—The E. D. Jones and Sons Company, manufacturer of paper mill machinery and United Electrical, Radio & Machine Workers, CIO, have reached a new wage agreement providing for ten-percent increase in base hourly rate of all employes within the bargaining unit consisting of 180 members. Effective the 21st, the present 48½-hour week, will be reduced to 45 hours, this eliminating Saturday from the regular schedule. The company also announced a 10 percent increase to all other employes. The company has an overall pay roll of 275 workers.

Pennsalt Superintendent Retires

NATRONA, Pa., January 17, 1945 — Charles G. Boone, superintendent of the Pennsylvania Salt Manufacturing Company plant here, has retired after 21 years as head of Pennsalt's Natrona operations.

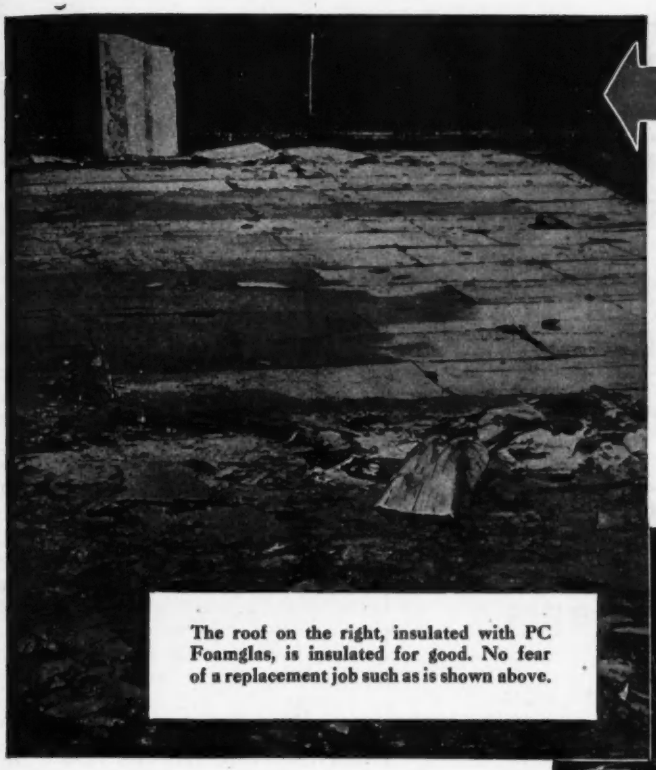
Mr. Boone, now 67, became superintendent of the Natrona plant on January 15, 1925, three months after he joined Pennsalt in the Philadelphia headquarters. He also is a director of the First National Bank of Natrona as well as a director of the Allegheny Valley Hospital and the Y.M.C.A. He is a member of the Natrona Heights Presbyterian Church.

Glatfelter Executives Retire

SPRING GROVE, Pa., January 28, 1946—Two Veteran employees of P. H. Glatfelter Company, have retired. Daniel S. Baker who had been superintendent of the beater room for many years is succeeded by Harry A. Glatfelter. S. C. Wentz, paper mill superintendent, also retired. Harvey L. Neff was promoted to superviser of the machine room, and Harry F. Stine succeeds Mr. Neff in the position of machine foreman.

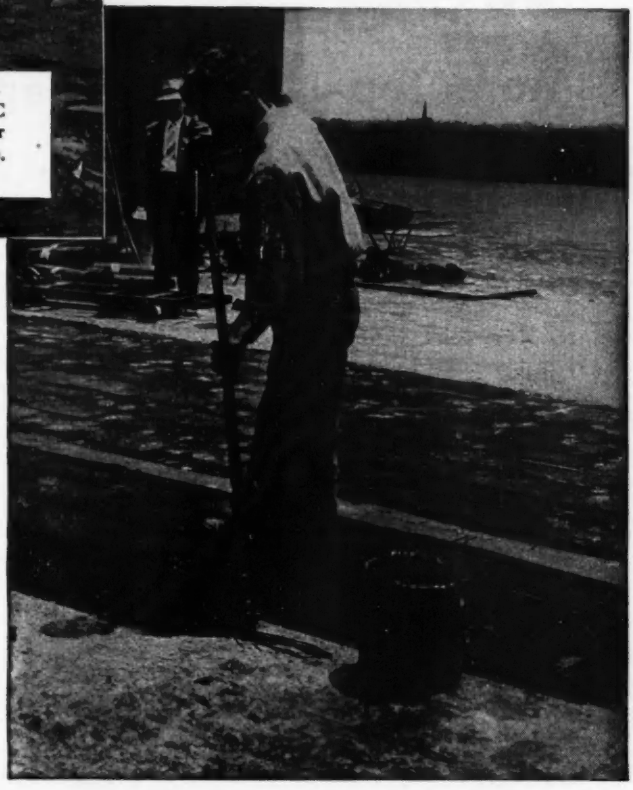
Package Machinery Convention Jan. 31

SPRINGFIELD, Mass., January 14, 1946—The thirty-third annual sales-engineering development conference of the Package Machinery Company will be held here from January 31 to February 2, it was announced today. Representatives from the New York, Cleveland, Chicago, Atlanta, Los Angeles and Toronto branches will attend.



The roof on the right, insulated with PC Foamglas, is insulated for good. No fear of a replacement job such as is shown above.

This won't happen here



YOU DON'T have to figure on repairs and replacement when you insulate your roof with PC Foamglas. For this strong, rigid material resists attack by elements that cause other materials to lose insulating efficiency. Made of millions of air-filled glass cells, PC Foamglas helps to maintain temperature and humidity levels, to prevent condensation, permanently.

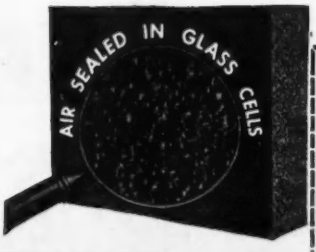
When you need roof insulation, you need a material that is moistureproof, fireproof, vaporproof, verminproof and impervious to most acids. It is conveniently packaged, easily handled, quickly installed.

Only with PC Foamglas do you get all these advantages. Even a break in the roofing felt that exposes the material to rain or melting snow will not cause PC Foamglas to rot, check, warp, swell or shrink. In addition it forms such a firm, even base for roofing felt that such breaks rarely if ever occur.

FIRST COST IS LAST COST

When you are figuring on insulation for roofs, floors, walls, tanks or plant equipment, learn why the most efficient, the most economical material is PC Foamglas. Check your choice of the illustrated booklets on PC Foamglas Insulation on the convenient coupon and mail it today to Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsburgh 22, Pa.

· Also makers of PC Glass Blocks ·



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TO SERVE YOU..

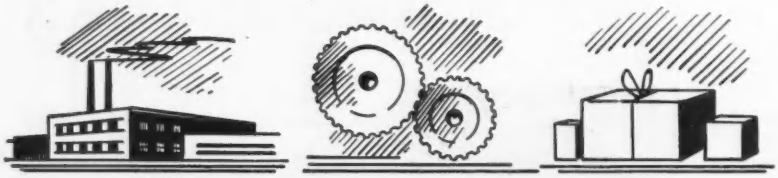
More Top-Notch Engineers

As part of its program to be of greater service to the paper industry, Cheney Bigelow has added top-flight personnel to its engineering staff during the past several years—men with a thorough understanding of the industry and its problems. Consequently, we have been able to make great progress in our design and experimental work, progress which has enabled us to reach the point where we will soon be able to announce new products of great interest to you.

Another phase of our program has been the improvement of our facilities both by the addition of factory space and the acquisition of the finest precision machinery. We are now in an excellent position to give you even faster, more expert service than ever before in the repair of old or the construction of new equipment.

The sole objective of our new program is to be more useful to you. We hope you will call on us.

MORE FACTORY SPACE · MORE PRECISION MACHINERY · NEW PRODUCTS



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A-C Promotes Fred Bush

Fred W. Bush has been promoted from assistant to the manager to assistant manager of the electrical department of the Allis-Chalmers Mfg. Co., Milwaukee, Wis. A graduate of Georgia Tech, Mr. Bush started with the company in 1928 on the Graduate Training Course and was made engineer's assistant in the electrical department in 1930. He became sales engineer in 1936 and in 1941 was named sales engineer-in-charge, transformer sales. A member of the American Institute of Electrical Engineers, Mr. Bush has contributed papers and articles of value to engineering publications.

Frederick C. Ludington has been named as manager of the firm's switchgear and control sections. Mr. Ludington, who joined Allis-Chalmers on March 1, 1923, has been acting manager of these sections since the resignation last July of W. S. Edsall. A native Milwaukeean, Mr. Ludington is a member of the American Legion and the Engineers Society of Milwaukee.

Neoprene Gloves Are Safe

Safety red, warning a worker when his hands are dangerously near moving machinery, is a feature of the Stanzoil neoprene-coated canvas glove, designed and made for industrial use by the Pioneer Rubber Company, Willard, Ohio. Oil and acid resistant, the gloves are made of milled neoprene, which provides a tougher coating for greater resistance to abrasion and other wear hazards. Curved fingers give greater comfort and make gripping tools and other objects easier. Made in both knit (No. R-26) and gauntlet (No. R-27) wrist style, the gloves are manufactured in one standard size.

Nickel Alloys

International Nickel Company, Inc., revised List "A" of current publications on nickel alloy steels, nickel cast irons, nickel brass and bronzes, and nickel plating is now available. Publications offered cover the production, fabrication, properties and uses of nickel alloys for industrial applications, and the production, properties and use of nickel electrodeposits.

Holyoke Card Meets

HOLYOKE, Mass., Jan. 21—The annual meeting of the Holyoke Card and Paper company was held recently and routine reports were made. All officers and directors were re-elected.

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Clean-Cut Performance from

SIMONDS

SPECIAL S-301 STEEL

Paper-Knives

No metal can cut paper like Simonds S-301 Steel. For this special paper-cutting steel takes a superkeen edge and a mirror finish that mean faster, smoother cutting *to hairline accuracy.* And what's more, Simonds automatic heat-treating and special grinding mean longer life per blade.

Have the Simonds Knife Specialist take a look at your operations. Chances are he can save you time, money, and give you better paper-cutting in the bargain. Ask your dealer to have him call, or write the nearest Simonds office.

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FITCHBURG, MASS.

PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.
W. L. Cook, Editor

MORE EMPLOYMENT IN FORESTRY

With the total wood pulp requirements estimated at from 12,700,000 to 13,570,000 tons and with estimated domestic production between 10,650,000 and 11,240,000 tons, a heavy demand for wood pulp for paper, rayon, cellophane, plastics and molded products is indicated throughout 1946 and 1947. As pulpwood is the prime raw material, a very large force of forestry workers is also indicated. Approximately 2,500,000 new and permanent jobs toward the goal of full employment in the United States can ultimately be created if the nation carries through an adequate nation-wide forestry program, Lyle F. Watts, Chief of the Federal Forest Service, told Secretary P. Anderson in his 1945 annual report just released.

During the war we have subordinated our long-term objectives to activities contributing to war production and military use of forest products, Mr. Watts said. Now it is time to gear our program to the needs of an expanded peacetime economy. At present the nation's forests directly or indirectly, provide about 3,750,000 jobs, but if the productivity of our depleted forests and run-down ranges were restored, and if other resources of the forests were fully developed, the employment figure might be stepped up by 2,500,000 jobs for a total of 6,250,000. As one step in building up the nation's productive assets to sustain an increase of 2,500,000 jobs in the basic level of industrial employment, Mr. Watts pointed out, a nation-wide program of public and private forest work that would keep almost 350,000 men at work for about six years and cost in the neighborhood of $5,000,000,000 was recommended.

The chief forester warned, however, that we cannot build up forest productivity so long as destructive cutting practices are prevalent. He advocated a comprehensive forestry program, including (1) nation-wide regulation of timber cutting and related forest practices as assurance that the nation's forests shall be kept reasonably productive, (2) public ownership of millions of acres which private owners find unprofitable to hold or on which watershed, recreation or other public interests outweigh the interest of a single owner, and (3) increased government assistance to private forest owners. Breakdowns of the 350,000-man forest work program stated that, if work of the kind carried on before the war by the Civilian Conservation Corps were resumed, about 163,000 new jobs could be set up in the woods without delay.

The vastness and variety of forest services and benefits was mirrored in the scope of the work needing to be done on publicly owned forest land. It would involve building a network of forest highways; gaining access to undeveloped areas through the construction of forest roads and trails; expansion of facilities for fire protection; tree planting; thinning, pruning and improvement work in young timber stands; range improvement; upstream work to reduce floods; recreational improvements, and other types of work. But the volume of essential public forest work could be greatly expanded, the report states, if land now largely useless and idle were purchased from private owners and restored to full production by reforestation and improvement. Here, declared the report, 30,000 men could be employed for six years at a cost of $500,000,000. An even larger back-log of useful work was seen in the job of rehabilitating run-down, privately owned forests and of planting thousands of miles of shelterbelts on the great treeless plains west of the Mississippi.

The report goes on to state that, the types of permanent employment that would be increased for the future by the six-year work plan consists principally of jobs in the woods, such as cutting and hauling timber, caring for new forests, collecting the gum of turpentine trees, manning lookout towers, maintaining roads, trails or recreational facilities; work in the processing of raw forest and range material, such as jobs in sawmills, chemical works, turpentine stills, pulp and paper mills, and other forest and range products. Wood requirements for pulp and paper, the report states, are expected to remain at levels far above pre-war production, with anticipated demand for domestic pulpwood at 14,500,000 cords annually. Five new Forest Service field units where experts will work to bring the research findings of the Forest Products Laboratory, Madison, Wis., direct to local industry, to transmit local problems to the laboratory, and to promote better forest utilization, will be established this year in different sections of the country, the chief forester announced. Two were set up last year, in the south and the other in the northeast. Announcement was also made that within the next fifteen years the Forest Service aims to plant 2,250,000 acres of denuded land in the National Forests.

Calendar of Coming Events

February 25-28, 1946.—American Paper and Pulp Association. Annual Convention, Waldorf Astoria Hotel, New York.

February 25-28, 1946.—Technical Association of the Pulp and Paper Industry, Annual Convention, Commodore Hotel, New York.

February 28, 1946.—Waxed Paper Institute, Annual Meeting, Hotel Pennsylvania, New York.

April 1-3, 1946.—National Paper Trade Association, Annual Convention, Waldorf Astoria Hotel, New York.

June 17-20, 1946.—American Pulp and Paper Mill Superintendents Association, Annual Convention, Poland Spring, Me.

Newsprint Production Higher in 1945

Newsprint production in Canada during December, 1945, amounted to 276,931 tons and shipments to 262,765 tons. Production in the United States was 61,563 tons and shipments were 62,551 tons. The output in Newfoundland was 27,346 tons and shipments were 31,485 tons making a total North American production of 365,840 tons and shipments of 356,801 tons. Total production in December, 1944, was 328,022 tons and shipments were 322,536 tons.

The North American output of newsprint paper in 1945 was 4,316,349 tons, of which 3,259,208 tons were made in Canada, 724,448 tons in the United States, and 332,693 tons in Newfoundland The Canadian output was 8.9 percent more than in 1944, that in the United States was 0.6 percent more, with a gain of 22.0 percent in Newfoundland, making a total increase of 331,966 tons, or 8.3 percent.

Stocks of newsprint paper at the end of December were 80,360 tons at Canadian mills, 6,340 tons at United States mills, and 56,361 tons at Newfoundland mills, making a combined total of 143,061 tons compared with 134,022 tons on November 30, 1945, and 105,085 tons at the end of December, 1944.

Superintendents to Meet June 17

The American Pulp and Paper Mill Superintendents Association, Inc., 220 East 42nd street, New York, will hold its annual convention June 17-20, 1946 at Poland Spring, Me. The association has held two previous successful conventions in Poland Spring and attendance this year should be high.

Waste Dealers to Meet February 19

CHICAGO, Ill., January 28, 1946—The Western Division of the National Association of Waste Material Dealers, Inc., will meet February 19th at the Hotel Sherman. There will be individual business meetings of the Waste Paper Institute and the Secondary Metal Institute.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1945		Corresponding Weeks—1944	
Dec. 15	99.0	Dec. 16	89.3
Dec. 22	96.5	Dec. 23	84.6
Dec. 29	60.8	Dec. 30	62.0
Jan. 5,'46	89.1	Jan. 6,'45	81.0
Jan. 12 (Revised)	95.3	Jan. 13	88.7
Jan. 19	*94.4*	Jan. 20	89.0

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1944	88.7	88.5	88.1	87.6	88.7	89.8	80.3	90.6	88.2	92.5	90.6	92.4	88.1
1945	86.7	89.4	90.2	88.1	89.8	91.2	80.8	88.6	90.2	95.9	95.5	*91.0*	89.7

COMPARATIVE YEARLY SUMMARIES

	1938	1939	1940	1941	1942	1943	1944	1945
Year Average	71.5	83.4	85.6	97.4	90.4	87.8	88.1	*89.7*

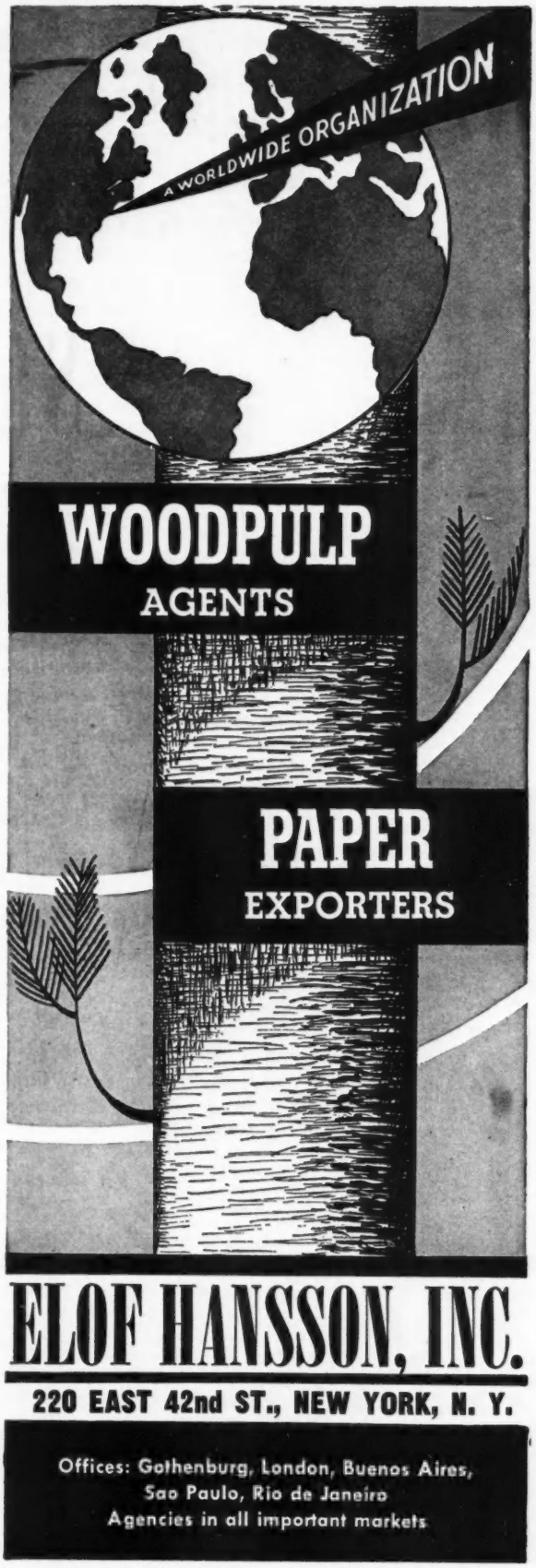
* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Current Weeks—1945		Corresponding Weeks—1944	
Dec. 15	98	Dec. 16	94
Dec. 22	92	Dec. 23	94
Dec. 29	52	Dec. 30	57
Jan. 5,'46	75	Jan. 6,'45	80
Jan. 12	94	Jan. 13	95
Jan. 19	*93*	Jan. 20	94

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1944	90	96	95	96	96	96	85	96	92	95	95	85	93
1945	91	95	97	97	96	96	86	90	91	97	95	*85*	93

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.



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122 E. 42nd St., New York 17, N. Y.
Edited by R. C. Macdonald, Secretary

Peroxide Bleaching of Mechanical Pulps*

Influence of Bacteria and Enzymes—Part I

By J. S. Reichert[1], R. T. Mills[1], and D. J. Campbell[1]

Abstract

Preliminary studies on the influence of bacteria and enzymes on the stability of peroxide in the bleaching of groundwood have shown that good control over microorganisms and the products of their metabolism is essential for best bleaching results. The aerobic types of bacteria prevalent in groundwood systems generate the enzyme catalase which is characterized by the property of accelerating peroxide decomposition. With proper control the adverse effect of catalase on peroxide stability is avoided and better and more uniform bleaching results are obtained.

A status report on the peroxide process for bleaching groundwood appeared in the PAPER TRADE JOURNAL early last year; this publication includes a comprehensive list of references to the previous literature *(18)*. Additional articles on the subject have been published in more recent journals *(8, 19)*.

Research and development work on this process has been restricted by wartime conditions. However, production of limited quantities of bleached groundwood has been continued for the manufacture of papers for special war uses and some new technical information has been developed. This paper deals with the influence of bacteria and enzymes on the stability of peroxide in the groundwood bleaching process.

Influence of Microorganisms in Groundwood Manufacture

The importance of maintaining good control over the growth of microorganisms is well recognized in the pulp and paper industry. Microorganisms may enter pulp and paper mills from various sources, e.g., with the raw water, the pulpwood, the white water, and the surrounding atmosphere. The microorganisms which enter the mill from outside sources or develop within the mill, are numerous in type and, without some means of control, bacteria, algae, and fungi reproduce and multiply rapidly. With an ample supply of food available and temperatures favorable to their growth, they manifest themselves in pulps and papers as slimes, off tastes and odors, spotting and general discoloration. Mechanical pulps are particularly susceptible to infestation with many types of bacteria, algae, and fungus growths; conditions in groundwood mill waters and pulp slurries are generally favorable for their development. Microbiological control is generally advantageous from the standpoint of lower production costs, better quality products, and higher yields.

Effect of Microorganisms in Groundwood Bleaching

Successful operation of the peroxide process for bleaching groundwood requires good control over microorganisms and their metabolic products for another reason. Microorganisms have the faculty of producing enzymes, among which is the enzyme catalase. This enzyme is characterized by its ability to decompose peroxide. When the peroxide bleaching solution is mixed with catalase-containing pulps, this enzyme proceeds to perform its peroxide-destroying function to the extent of its capacity. Consequently, some of the peroxide added to the pulp for bleaching purposes, is destroyed by the catalase before it can exert its bleaching action. The degree to which peroxide is wastefully decomposed by catalase varies with the amount of catalase present in the pulp slurry. When contamination of the pulp with microorganisms is extremely high, enough catalase may be generated to cause almost complete decomposition of the peroxide, in which case no bleaching is obtained. However, by exercising good control over the microorganisms in the groundwood system, the development of catalase is inhibited and its adverse influence in the peroxide bleaching process is avoided.

The Enzyme Catalase

Microorganisms have the faculty of producing enzymes, in fact most of the different classes of enzymes have been shown to exist in bacterial products. A single form of microorganism may secrete more than one kind of enzyme; some species of microorganisms are known to give rise to a large number of different kinds of enzymes. The types of enzymes secreted by microorganisms differ with the environment.

Enzymes have the property of accelerating chemical reactions. The enzyme saccharase accelerates the inversion of cane sugar, pepsin catalyzes the hydrolysis of albumins, lipase accelerates the splitting of fats, peroxidase catalyzes many oxidation reactions, and catalase accelerates the decomposition of hydrogen peroxide.

*To be presented by title at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 25-28, 1946.

[1] Peroxygen Products Division, Electrochemicals Dept., E. I. du Pont de Nemours & Co., Inc., Niagara Falls, N. Y.

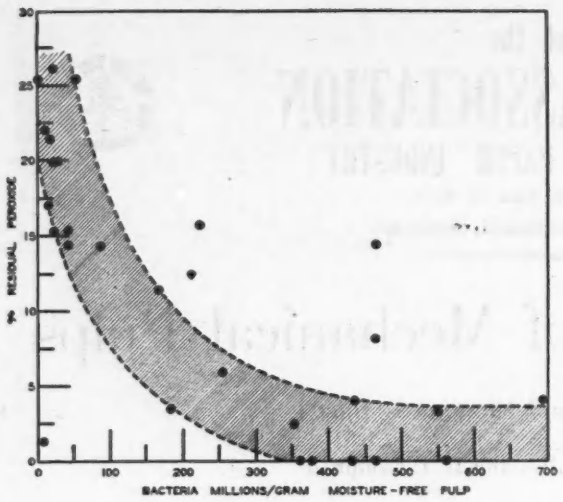

FIG. 1
Relation Between Bacteria Count and Peroxide Stability in the Presence of Groundwood

Most aerobic microorganisms generate hydrogen peroxide as a metabolic byproduct. Hydrogen peroxide has bactericidal properties and consequently these bacteria would soon succumb to the hydrogen peroxide which they generate. However, nature has provided them with a defense mechanism by enabling them to produce the enzyme catalase which decomposes the hydrogen peroxide as it is generated by the metabolism of microorganisms.

Catalase is included in the list of iron enzymes. It contains about 0.09% iron and its property of catalyzing the decomposition of hydrogen peroxide is ascribed largely to its iron content. Besides iron, catalase contains oxygen, nitrogen, hydrogen, and carbon. Chemically it is a combination of a protein and hematin or some closely allied group with a molecular weight of about 225,000; the iron is present in the hematin group. The term catalase refers to a class of compounds with the same general chemical composition and structure. Theoretically, a large number of different catalases could be postulated, considering the numerous combinations which might exist between the different protein and hematin structures. Actually, the catalases occur in all forms of life and some catalases have been isolated, e.g. from beef livers.

Catalases from different sources show different physical characteristics, e.g., solubility in water and crystal form. In the pure form beef liver catalase is a fairly stable, crystalline solid. Its isoelectric point is pH 5.7; there appears to be no correlation between its isoelectric point and its catalytic activity. The catalytic activity of catalase varies with pH and reaches a maximum at pH 6.8; at this pH one molecule of catalase will, at 0°C. decompose 2.6 million molecules of hydrogen peroxide. At lower and higher pH values its catalytic activity decreases; at pH 3 it is destroyed. The quantitative activity of catalase in destroying hydrogen peroxide reaches an optimum at a temperature of 0 to 10°C.; at higher temperatures the rate at which it initially decomposes hydrogen peroxide is greater but the total amount of hydrogen peroxide decomposed by a constant amount of catalase decreases at higher temperatures. This is ascribed to the accelerated destruction of catalase by hydrogen peroxide at the higher temperature. In the absence of hydrogen peroxide deactivation of catalase is inappreciable at a temperature below 40°C.; in the presence of hydrogen peroxide deactivation is fairly rapid at a temperature as low as 10°C. Increased activity has been observed in some instances upon heating to 40 to 60°C. for several hours; this is attributed to the destruction of an anticatalase. In most instances catalase is very rapidly destroyed at temperatures somewhat below 100°C.

Catalase is readily detected since it is active at great dilution; evolution of oxygen from hydrogen peroxide solutions is apparent at concentrations as low as 4 to 5 parts catalase per 100 million. Quantitative determination of catalase may be based on measuring the rate at which hydrogen peroxide disappears upon treatment with catalase; this measurement is usually carried out at 0°C. to minimize peroxide decomposition from other causes. Polarographic methods are also used for this determination.

Experimental

Bacteria Content of Groundwood

Catalase-generating microorganisms have been found prevalent in groundwood systems. They may be introduced with the raw water supply, with the pulpwood, or with the white water or they may enter the groundwood system from other sources in the mill. Bacteria counts made on pulps within 24 hours after grinding showed wide variations, ranging from nil to somewhat over 300 million and averaging a little under 100 million per gram of moisture-free pulp. The counts were taken over a period of 3 months.

It is interesting to note that the water removed from groundwood pulp by filtration was remarkably low in bacteria count; the bacteria were present largely on the groundwood fiber.

During storage the bacteria count of these pulps rose to a maximum in several days and then receded, finally reaching a negligible value. The rapidity of the growth of bacteria during the first few days varied considerably; this probably depends upon the available food supply, which in turn may vary with the nature of the pulpwood, e.g., species of wood and age of the wood before grinding. The subsequent drop in bacteria count may be due to such factors as exhaustion of the food supply or generation of toxic materials by the bacteria themselves.

TABLE I.—RELATION BETWEEN BACTERIA COUNT AND PEROXIDE STABILITY IN THE PRESENCE OF GROUNDWOOD

Bacteria/Gram Moisture-Free Pulp (Millions)	Residual Peroxide After 24 Hours (%)
258	6.2
379	0
465	0
22	19.8
356	2.4
363	0
59	25.4
442	3.9
24	15.2
185	3.2
90	14.2
563	0
15	22.1
461	7.9
228	15.7
550	3.1
18	17.0
691	3.9
29	19.8
217	12.4
20	21.6
434	0
46	14.4
464	14.4
12	1.5
46	15.3
nil	25.3
26	26.0
171	11.6

In preliminary studies, groundwood with a bacterial count of 50,000,000/gram (moisture-free pulp basis) reacted almost normally to peroxide bleaching. When the bacteria count increased to 100,000,000 to 150,000,000/gram, a small adverse effect became apparent. When the bacterial count was permitted to increase to 400,000,000/gram and over, substantially smaller increases in brightness were obtained in the peroxide bleaching process. More data are being developed on the relationship between bacteria count and bleachability of groundwood.

Relation Between Live Bacteria and Peroxide Stability

A study of the effect of live bacteria and associated enzymes (catalase) was carried out in two phases. In the first phase the disappearance of peroxide during the groundwood bleaching treatment was correlated with the bacteria count. The bleaching was carried out at 90°F. with 2% sodium peroxide at 5% pulp consistency *(18)*; the residual peroxide was determined by titration at the end of 24 hours. The data are given in Table I and are shown graphically in Fig. 1. With few exceptions, the rate of peroxide disappearance shows a general increase with an increase in bacteria count. The exceptions are probably caused by differences in the amount of catalase generated by the bacteria before the bleaching treatment and by differences in the extent to which the catalase generated by the bacteria had decomposed before the bleaching treatment. The catalase content of groundwood is expected to show a closer coordination with the rate of peroxide disappearance during the bleaching treatment than the bacteria count. A study of this relationship is in progress.

The second phase of the investigation of the effect of live bacteria and associated enzymes (catalase) on peroxide stability was carried out with bacteria from groundwood in the absence of the pulp. The pulp-free bacteria were produced by incubation of representative bacteria taken from the pulp. These pulp-free bacteria were mixed with sterile water and added in varying amounts to a constant volume of a peroxide bleaching solution, identical in composition and under conditions similar to those prevailing in bleaching

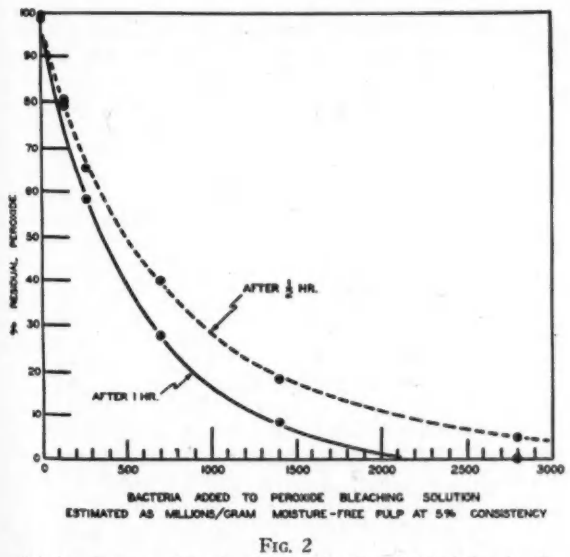

FIG. 2
Relation Between Bacteria Count and Peroxide Stability in the Absence of Groundwood

TABLE II.—RELATION BETWEEN BACTERIA COUNT AND PEROXIDE STABILITY IN THE ABSENCE OF GROUNDWOOD

Bacteria Added to Peroxide Bleaching Soln.		% Residual Peroxide	
Ml. of Suspension	Estimated as Millions per Gram Moisture-Free Pulp at 5% Consistency	After ½ Hour	After 1 Hour
None	None	99.3	98.5
1	28	94.6	94.0
5	140	80.2	79.6
10	280	66.2	58.0
25	700	39.7	27.3
50	1400	18.5	8.2
100	2800	14.8	99.3

with 2% sodium peroxide at 90°F. and 5% consistency *(18)*. The data on bacteria counts and residual peroxide after 30 and 60 minutes are given in Table II and are shown in Fig. 2. The results confirm the results obtained in the presence of pulp. In the presence of less than 100 million bacteria per gram of dry pulp at 5% consistency a relatively small increase in the rate of peroxide decomposition was observed. The peroxide disappeared more rapidly as the bacteria count increased. With extremely high bacteria counts the peroxide disappeared completely in an hour or less.

Relation Between Dead Bacteria and Peroxide Stability

The accelerating effect of live bacteria and associated enzymes (catalase) on peroxide decomposition was completely inhibited when the pulp was sterilized by heating (10 pounds steam pressure for 5 minutes) or by a treatment with chlorine (100 p.p.m.). The peroxide-destroying enzymes (catalase) evidently do not survive these bactericidal treatments.

Conclusions

From these data it is apparent that better bleaching results are to be expected in the absence of microorganisms and their metabolic products (catalase). In bleaching groundwood with peroxide, steps should be taken to avoid the development of bacteria and associated bacterial products (catalase) in the groundwood system or to destroy them before the peroxide bleaching treatment is applied.

Methods of Microbiological Control

From a recent survey of 34 mills *(2)* the Biological Control Committee of the A.P.P.A. reports general prevalence of slimes in pulp mills and describes effective methods for slime control. Satisfactory experiences with slime control in a paper mill are reported in recent Technical Association Papers *(30)*. The subject of pulp and paper mill slime and its control was presented in an extensive review last year *(11)*.

By application of control methods which will destroy both the catalase and the catalase-generating microorganisms, uniformly better results may be expected in the peroxide bleaching of mechanical pulps.

Acknowledgment

The new data presented in this paper were developed with the cooperation of the following members of the Technical Division: W. O. Stauffer, W. S. Hinegardner, A. M. Taber, G. E. Doty and R. P. Kudela.

Literature References

Publications on microorganisms and on the control of microorganisms in pulp and paper mills are very extensive. The number of textbooks and literature articles found in a survey of the literature, limited to the

phase of the subject under consideration in this paper, approached two hundred. The following list includes a few of these references.

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Boiler Room Questions

The McGraw-Hill Book Company has recently issued a useful book entitled "Boiler Room Questions and Answers," by Alex Higgins, Consulting Engineer, Calgary, Alberta, (139 pp. 8½ x 11). This book was prepared to assist men studying for certificates as operating engineers. It is also a valuable aid to the plant operator in the solution of problems that confront him in his daily routine. There are 26 chapters made up entirely of everyday questions and answers, many illustrated with sketches.

Among the subjects covered are: water-tube boilers; construction materials; stays, stay-bolts, boiler calculations; steam gauges and water columns; safety valves; boiler-feed and blowoff; boiler construction; boiler foundations and erection; typical boiler repairs; fuel facts; fuel gas analysis; facts about draft; hand and stoker firing; pulverized coal, gas and oil combustion; boiler feed water heating and treatment; heat facts; how to use steam tables, injectors and pumps; pipe and piping accessories; and piping layout and calculations.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York 17, N. Y., at $3.00 per copy.

TAPPI Notes

Lt. Charles M. Koon is now with the Munising Paper Company, Munising, Mich.

Donald E. Borchers, formerly of the Celanese Corporation of America, is now research chemist for the Brown Company, Berlin, N. H.

Charles Stevens, formerly with the Climax Engineering Company, is now chief engineer for Glass Fibers, Inc., Toledo, Ohio.

Donald E. Bradner, formerly of the Champion Paper and Fibre Company, is now located at 4107 18th Street, Washington 11, D. C.

Capt. William H. Aiken, formerly of the Quartermaster Corps, Polytechnic Institute of Brooklyn, is now in the Plastics and Coatings Department, Goodyear Tire & Rubber Company, Akron, 16, Ohio.

R. Seward Hagaman, formerly of the Defender Photo Supply Company, is now in the Research Dept., The Haloid Company, Rochester 3, N. Y.

Walter J. Cassidy, formerly of the Hawthorne Paper Company, is now with the Sorg Paper Company, Middletown, Ohio.

Capt. Fred E. Culp, formerly of the U. S. Navy, is now supervisor of coating research and development, Consolidated Water Power & Paper Company, Wisconsin Rapids, Wis.

Charles W. Cassell, formerly of the Congoleum-Nairn Company, is now chemist for the Bryant Paper Company, Kalamazoo, Mich.

Major Douglas G. Sutherland has returned to the Sutherland Refiner Company, Trenton, N. J.

Lt. John H. Heuer is now with the Newton Falls Paper Company, Newton Falls, N. Y.

Einar Walloe of the Marathon Paper Mills of Canada has been transferred from Toronto to Marathon, Ont.

R. A. Diehm has resigned as technical director of the Container Corporation of America and is at present located at 315 Scottswood Roard, Riverside, Ill.

John O. Burton is now research manager of the Minnesota & Ontario Paper Company, International Falls, Minn.

John H. Noble of the Improved Paper Machinery Company is now located in Room 1104, 441 Lexington Ave., New York 17, N. Y.

L. Morris Mitchell, formerly vice president of Merritt-Chapman & Scott Corp., is now located in Room 802, 1 East 42nd Street, New York, N. Y.

John E. Parnell, formerly of the North Carolina Pulp Company and the Clinton Engineering Works has joined the research staff of the Crossett Lumber Company, Crossett, Ark.

The Western New York Group of the TAPPI Empire State Section will meet at the Prospect House, Niagara Falls, N. Y. at 6:45 p.m., Wednesday, February 15th. Francis Bowman of the Carborundum Company, Niagara Falls, will talk on "The History and Development of Abrasives." William Barrett of the same Company will talk on "New Developments in Pulp Grinding." A motion picture on Higher Production and Greater Precision through Grinding" will be shown.

The Northern New York Group of the TAPPI Empire State Section will hold a Ladies' Night on Thursday, February 14th at 7 p.m. Entertainment will be furnished by W. Bresnahan, magician.

Correction: In TAPPI Standard T 448 m-45 the figure illustrating the test dishes was omitted. This figure is contained in T 464 m-45.

Qualitative Identification of Synthetic Resins*

By John H. Graff[1]

Abstract

Methods are given for the qualitative determination of sizing materials used by the paper industry.

The presence of starch, glue, and rosin can be determined by the iodine, biuret, and Raspail tests. The synthetic resins react to various stains and tests which give color effects that are indicative. By utilizing a combination of tests it is possible to separate the various sizing agents into groups and effect a determination.

A few years ago it was only necessary to be able to determine if a paper contained rosin, starch, glue, or casein. However, during the last few years, synthetic resins, which were developed primarily for use as plastics, have been applied to papers in one form or an other and, because of the increasing use of these materials, the question of the possible qualitative identification of these resins becomes important.

Chapter XX (pages 738-876) of the Handbook of plastics by Simonds and Ellis is devoted to analysis of plastics. The following tables are given:

1. A scheme for the qualitative analysis of the more common plastics based on their solubilities.
2. Specific gravity and refractive index.
3. Fluorescence of common plastics in filtered ultraviolet light.
4. Behavior of plastics on strong heating of samples in test tubes.
5. Method of separating cellulose derivatives.
6. Resistance to chemicals shown by various plastics, rubber derivatives, and synthetic rubbers.

Another publication on the identification of resins is an article by Rendle and Franklin on the identification of plywood glues [*J. Soc. Chem. Ind.* 62, No. 1:11-14 (January, 1943)].

The latest publication on the identification of these synthetic resins is an article by Stafford, Thomas, Williams and Woodberry on "Identification of melamine and urea resins in wet strength papers" [*Paper Trade J.* 120, No. 16:51-56 (April 19, 1945)].

This paper outlines the details of two new laboratory methods for the identification of melamine and urea resins in wet-strength papers. The first procedure involves a dyeing-staining test for melamine and urea resins with Calcocid Alizarine Blue S.A.P.G. The second procedure describes an optical method for the specific identification of urea after hydrolysis of the resin and precipitation with xanthydrol. Reported procedures for the detection and identification of protein wet-strength additives, as well as general methods for resin in paper, are listed and discussed.

Size Determination

However, it must always be remembered that, in most instances, papers are not, as a rule, sized with any of the new resins alone but in different combinations with other sizing materials, such as rosin, alum, starch, and glue, together with any one of the numerous plasticizers. Also, some fillers and dyes added to the papers may have some influence, whereby the problem of quaiitative determination of the presence of each of these sizing materials becomes somewhat complicated.

However, before a quantitative determination of any of these different sizing materials can be made, it is important that a relatively quick, simple, and dependable method be developed. Because of combinations of any of the different synthetic resins, rosin, alum, starch, and glue may be present in different and varied amounts in a paper, it is clear that dependable results cannot be obtained with a single stain or reagent, but that two, three, or more different tests may be necessary for the proper identification of the different sizing materials present.

The presence of starch, glue, and rosin can easily be determined with the iodine, the biuret, and the Raspail tests, and if the iodine and the biuret tests are carried out as described in the second edition of the writer's book, "Pulp and paper microscopy" the relative amount of the starch or glue present in the paper can also be determined.

Stains

Former work by the writer has suggested that it probably would be possible to obtain differential color reactions on papers treated with the different synthetic resins by using one or all of the selective staining reagents developed for the identification of textile fibers (animal, vegetable, or synthetic) by distinct color differentiations. Therefore, the following stains were selected: Neocarmin W, Shirlastain, Colotex B, and Texchrome. Besides these, a stain for the identification of polyvinyl alcohol, suggested by correspondence with E. I. du Pont de Nemours & Co.—ammonium hexanitrate cerate and nitric acid—was tried.

Samples

The samples used consisted of a number of coniferous bleached kraft sheets, which had been treated with known percentages of different synthetic resins as follows: Waterleaf sheets, 9.58% phenol-formaldehyde (partly cured), 5.84% phenol-formaldehyde (cured), 1.06, 6.58, 8.28, and 14.4% polyvinyl acetate, 7.37% polyvinyl copolymer, 8.58% polyvinyl chloride-acetate copolymer (88% chloride), 0.52, 6.78, and 7.00% polyvinyl butyral, 0.70, 5.40, and 7.27% ethylcellulose, 6.60% cellulose acetate butyral, and 3.90% chlorinated rubber.

Besides these, ten commercial papers were tested. These were as follows: Urea-formaldehyde (Uformite) and starch; urea-formaldehyde, rosin, alum, and starch; rosin, alum, starch, glue, and 1.70% melamine; rosin, alum, starch, and 2.75% melamine; rosin, alum, starch, and 3.00% melamine; rosin, alum, starch, and 4.53% melamine; starch and alum; rosin, alum, and starch; rosin, starch, glue, and formaldehyde; and rosin, alum, starch, and glue (glue hardened).

The commercial papers used were the only ones obtainable with known contents of the sizing materials used. Many other combinations would have been desirable for definite proof that any of the different

* Presented at the meeting of the Kalamazoo Valley Section of the Technical Association of the Pulp and Paper Industry, Columbia Hotel, Kalamazoo, Mich., October 4, 1945.

[1] Member TAPPI; Research Associate, The Institute of Paper Chemistry, Appleton, Wis.

synthetic resins, alone or in combination with different amounts of other sizing materials, can be qualitatively determined by the methods which will be outlined in this paper.

Procedure

As each of the different selective dyeing reagents used varies somewhat in its color reactions with different materials, each was used to see which would give the best color differentiations.

Strips of the papers were dyed for 3 minutes at room temperature in the dyes, thoroughly washed in running water until all surplus dye was removed, and dried at room temperature.

Reactions

It was shown that, by means of the dyes, the papers could be separated into the following groups: Phenol-formaldehydes; polyvinyl acetates; ethylcelluloses; urea-formaldehydes; melamines; rosin, alum and starch; and rosin, alum, starch, and glue, and the color reactions for each of these groups, in some cases, varied in intensity according to the relative amount of resins present in the papers.

All these color reactions are permanent and in many instances also show two-sidedness of the sizing treatment given. However, one of these dyes may be better than another for some separations.

The ammonium hexanitrate cerate which, according to Du Pont, should stain polyvinyl alcohol red, was used by making a solution of 40 grams of the ammonium hexanitrate cerate in 100 ml. of water and 14 ml. of concentrated nitric acid. The paper strips were kept in this solution for 5 minutes at room temperature, blotted, and dried.

The dye reactions with ammonium hexanitrate cerate are not at all permanent. When the color reactions were noted after drying for 2 hours, it was found that the waterleaf sample, and the papers treated with polyvinyl chlorides and butyrals, ethylcelluloses, cellulose acetate butyrals, and chlorinated rubber gave negative results as well as those sized with rosin, alum, starch, and glue. Papers sized with polyvinyl acetate, urea-formaldehyde, and melamine had a yellow color, that sized with starch and alum had an orange color, and those treated with formaldehyde had a pink color. However, these color reactions faded completely after exposure to light for 12 hours.

The iodine stain, which also is more or less fugitive, did not give a reaction with the waterleaf sheet or papers treated with polyvinyl copolymer, chloride-acetate, cellulose acetate, and chlorinated rubber; however, it gave a strong brown color reaction with those treated with polyvinyl acetate, a faint yellow reaction with those treated with polyvinyl butyrals, a faint orange color reaction with those treated with ethylcellulose, and the usual gray-blue-violet reaction with all those containing starch.

The biuret test only reacted with those papers which contained glue.

The Raspail test does not give a reaction with papers treated with any of the polyvinyl resins, ethylcellulose, cellulose acetate, or chlorinated rubber; however, it gives a dark brownish-red reaction with those treated with phenol-formaldehyde resin, even without the application of the sugar solution, a pinkish-red reaction with those treated with urea-formaldehyde resins, and a violet-red color reaction with all those containing rosin.

The method by which the papers disintegrate is also of great help in the identification of the resins. Papers containing melamine resins all have to be dis-

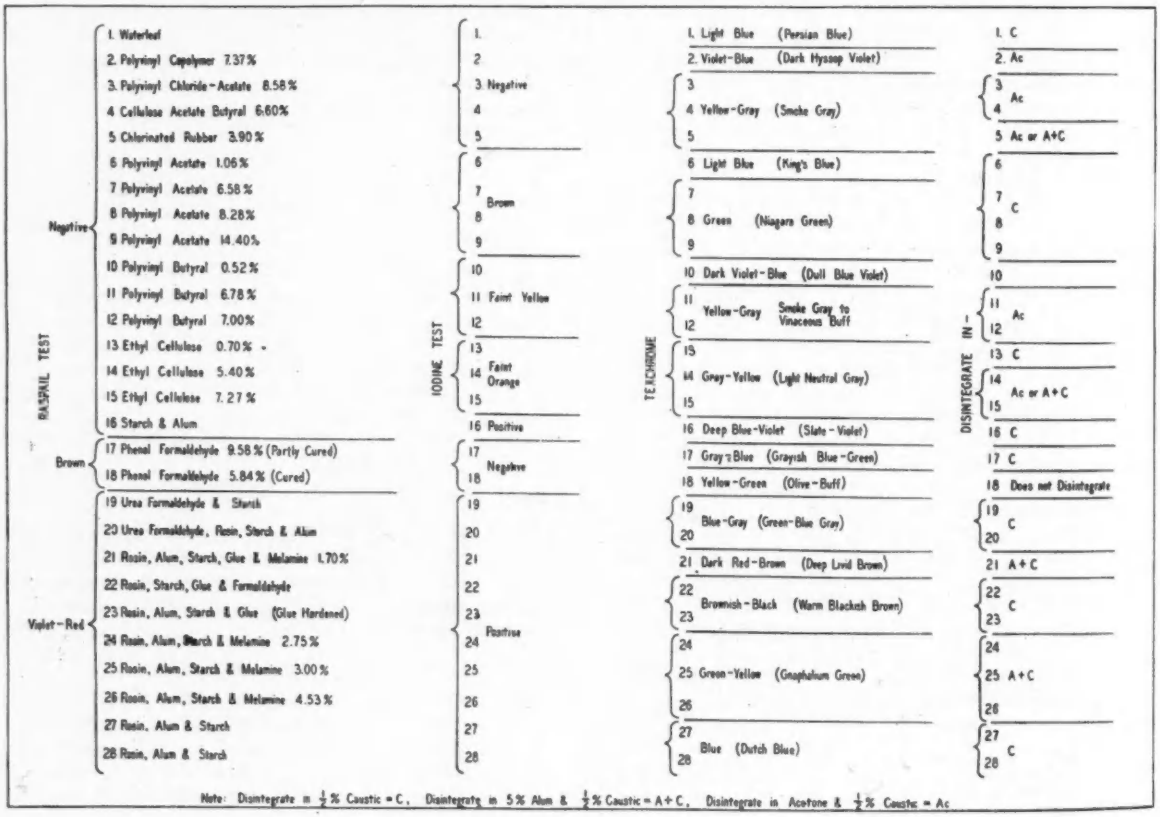

Fig. 1

integrated by first boiling in 5% alum and then the usual 0.5% caustic treatment; the papers treated with polyvinyl copolymer and polyvinyl chloride-acetate, as well as those treated with polyvinyl butyral and cellulose acetate butyral, must first be soaked in acetone and then given the standard caustic treatment before they disintegrate. Those treated with ethylcellulose and chlorinated rubber disintegrate by any of the two last mentioned methods; the rest of the samples disintegrate upon using the standard method of 0.5% caustic.

Test Conclusions

The foregoing shows that the sizing and resin materials used in a paper can be satisfactorily determined by first applying the Raspail test, then the iodine test, then any one of the selective dyeing reagents (Texchrome has been selected because it is made in the United States), and then finally checked by determining by which method the paper most easily disintegrates. The reactions are shown in Fig. 1.

The Raspail test split the papers into three distinct groups; the iodine test splits these into seven other groups, which again, by the Texchrome are split into 16 groups and these are split in some instances by the method by which they disintegrate.

Applying these methods to the papers tested, the results show that the papers have been qualitatively separated into the following distinct groups: Waterleaf sheet; polyvinyl copolymer; polyvinyl chloride-acetate and cellulose acetate butyrals; chlorinated rubber; polyvinyl acetate; polyvinyl butyrals; ethylcellulose; starch and alum; phenol-formaldehyde; urea-formaldehyde; rosin, alum, starch, and glue; melamine; and rosin, alum, and starch.

All the papers tested in these experiments were white papers and no experiments have been made with papers made of unbleached pulps or papers containing fillers or plasticizers. The relative amount of rosin, alum, starch, glue, and resins retained in the finished papers is of importance; the order and method by which these different ingredients are added to the stock may have some bearing upon the results; resins having the same name but produced by different manufacturers may give different results.

Because of these different factors, it will not be possible to suggest any standard method for the qualitative determination of the different sizing and resin materials in a paper until the resin manufacturers can supply standard commercial samples of papers treated with known amounts of any of the resins alone or in different combinations with any or all of the different common sizing materials used both for unbleached and bleached papers, with and without known amounts of different fillers and plasticizers.

Glycerin

The Chemical Publishing Company has just issued "Glycerine—Its Industrial and Commercial Applications" by Georgia Leffingwell and Milton A. Lesser (302 pp. 5½ x 8½). This is a survey of the large number of technical products that contain glycerine. There are chapters on adhesives, packaging materials, paper, plastics, etc. Each chapter contains a discussion of the properties of glycerine which render it useful for each specified product.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd St., New York 17, N. Y., at $5.00 per copy.

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has elected the following to membership:

George E. Niles, Research Chemist, Monsanto Chemical Company, Merrimac Division, Boston, Massachusetts, a 1940 graduate of the Massachusetts Institute of Technology.

Frederick L. Hogan, Manager, Consolidated Paper Corporation, Ltd., Port Alfred, P. Q., Canada.

Stewart V. Rogers, Consulting Engineer with Kenneth A. McIntyre Associates, 2032 Carver St., Philadelphia, Pennsylvania, a 1922 graduate of Edinburgh Polytechnic.

David P. Keefe, Chemist, Minnesota Mining & Manufacturing Co., St. Paul, Minnesota. Attended the University of Minnesota and St. Thomas' College.

Ernest Schmatolla, Purchasing Agent, Publishers Printing Co., 207 West 25th St., New York, New York.

Robert M. Cairns, Superintendent, J. C. Wilson Ltd., Lachute Mills, P. Q. Canada.

Cyril Delevanti, Chemist, Brown Company, Berlin, New Hampshire, a 1942 graduate of the Institute of Paper Chemistry.

Paul R. Eastwood, Research Coordinator, Kimberly-Clark Corporation, Neenah, Wisconsin, a 1929 graduate of the University of Wisconsin.

Hobart L. Geer, Field Engineer, Philco Radio and Television Corporation, Philadelphia, Pennsylvania, a 1939 graduate of the New York State College of Forestry.

Walter C. Granville, Color Laboratories Division, Container Corp. of America, 111 W. Washington St., Chicago, Illinois.

Western New York Group Discusses Electronics

The monthly meeting of the Western New York Group of the TAPPI Empire State Section was held on January 9th at the Prospect House, Niagara Falls, N. Y.

W. J. Murphy of the Westinghouse Electric Corporation gave a paper on "Electronics and Paper." The subject included photoelectric cell applications, electronic speed regulator for paper machine drives, and the "Mot-O-Trol" which is an electronic motor drive for wide-speed regulation. The applications and limitations of dielectric heating were also discussed.

Those present included: F. H. Ayers, B. A. Audley, W. E. Beazley, P. Bechler, H. Bailey, W. W. Barrett, H. Boos, C. H. Bishop, John Campbell, J. Canovan, R. Cleeland, Mrs. J. Diury, F. W. Decker, H. R. Davidson, Merrill Eldridge, R. B. Embury, J. H. Fisher, D. H. Gimbor, W. F. Griswold, A. B. Gorham, W. Gibson, C. C. Gerry, C. T. Hook, John A. Hoffmister, A. C. Hayes, R. J. Harley, A. T. Hudson, Ruth Hays, E. B. Jacobi, W. E. Jacobs, Max Krayewski, Frank B. Loppnow, C. A. Lackey, John Morrison, George E. Norton, A. H. Nadelman, A. P. Nuttes, Mrs. B. Orchard, W. M. Orchard, Harold E. Peterson, R. D. Rusch, P. R. Reilly, John D. Rue, P. R. Rolleston, Otto Schiesser, W. P. Sullivan, L. L. Suitor, H. J. Smith, W. C. Stephens, B. J. Staneslow, Salvatore M. Scaletta, G. M. Uptegroff, W. K. Voss, Francis R. Webster, T. J. Wilcox, R. Weinig, Lloyd Wallace, A. C. Hayes, J. W. Youngchild, C. E. Youngchild, Carl R. Loke, R. McCurly, N. R. Phillips.

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Prepared by Clarence J. West, Chairman, Committee on Abstracts and Bibliography, TAPPI

The page numbers in the following index refer to the continuous pagination of the *Technical Section* and not to the individual numbers of the PAPER TRADE JOURNAL. The names of the authors on the index are printed in alphabetical order.

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Canadian Groups Clarify Functions

MONTREAL, P. Q., January 28, 1946—Canadian Pulp and Paper Association has been established as the single representative body of Canadian pulp and paper producers in matters concerning the industry as a whole. Newsprint Association of Canada (NAC) will continue to represent the industry in matters pertaining specially to newsprint. The previous Joint Executive Board of the two associations has been dissolved and its general functions have been transferred to the Executive Board of CPPA, to which newsprint representation has been added.

These changes were announced in a statement released today by the two associations, describing the changes as a result of association conferences recently held in Montreal for the purpose of simplifying industry procedure. The statement sets forth in detail the respective functions of the two associations and their executive bodies.

The statement also confirms an earlier report that Charles Vining, president of the Newsprint Association since 1934, has relinquished this position to become chairman of the association's Executive Committee. He has been succeeded as president by R. M. Fowler, who is also president of the Pulp and Paper Association. This change in presidency conforms to an agreement which the Newsprint Association made with Mr. Vining in 1944 upon his return from a period of government wartime services. Mr. Fowler's election as president of NAC is with the concurrence of CPPA.

Change in Paper Tariff Needed

Aluminum foil paper has been held dutiable by the United States Customs Court to be dutiable at the value fixed by the German cartel which worked out a method of price control under which Customs officials are required to compute duty rates on the basis of the price set by the cartel, even though this price was much lower than that for which the paper was sold in Germany. The case has been pending since before the World War, and has just been decided. Over two hundred shipments are still pending.

"Even though these shipments were actually at a dumping price," says Warren B. Bullock, Manager of the Import Committee of the American Paper Industry, "the foreign cartel was able to work out a method of control of the market which nullifies the effect of American laws regarding the computation of duties and dumping. The Tariff Act provides that duty must be computed on the basis of the 'freely offered value' in the country of origin. By restricting foreign buyers from reselling the paper, the actual ruling in price in Germany ceased to be a freely offered price and the sale price, far below the price at which sale was made to the United States market became the legal dutiable value according to the decision just rendered.

"This situation is one which a proper adjustment of American Tariff laws and negotiations with foreign nations should correct, especially as the principle affects sales of kraft and sulphite wrapping papers from Scandinavia.

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New York Paper and Pulp Market Review

Paper and Wood Pulp Demand Heavy—OPA Adjustments Beneficial To Industry—Consumers' Newsprint Inventories Increased—New Rag Supplies Very Low — Waste Paper Demand Is Heavy.

Office of the PAPER TRADE JOURNAL,
Wednesday, January, 30, 1946.

Demand for paper and paper products and production continue at a high level. The adjustments in prices and some of the more destructive regulations eased by OPA, have contributed relief. Much more, however, must be accomplished to free the paper industry and other industries. Current signs in the settlement of the steel strike situation, to cite but a single instance, are encouraging as reflecting a more realistic conception of actual conditions and the prime necessity of removing all possible restrictions to provide the largest possible output of all types of badly needed goods.

The CPA has announced an increase in consumers' inventories in Amendment 7 to Priority Regulation 32, on January 22, 1946. The inventory ceilings have been raised from 25 to 30 days' use in the Eastern and Central States, and from 45 to 50 days in the Southern and Western States. This does not reflect any increase in the newsprint supply but affords a reasonable minimum operating inventory for newsprint users. The anticipated supply still holds at the previous estimate of 1,935.000 tons for the first half of 1946.

A late Department of Commerce report states that, prospects are that paper production and consumption will reach record levels in 1946, and domestic requirements will probably exceed former peacetime levels by 25%. It is anticipated by the Department that the output of paper and paperboard will amount to 18,000,000 tons, and imports from Canada will exceed 3,000,000 tons.

New manufacturers of waxed paper have been given a simple method of establishing their ceiling prices, in Amendment 5 to Maximum Price Regulation 307—Waxed Paper, effective January 22, 1946.

The index of general business activity for the week ended January 19 declined to 129.4, from 133.3 in the previous week, compared with 147.5 for the corresponding week in 1945. The index of paperboard production was 145.3, compared with 149.8 in the previous week, and with 152.8 for the corresponding week in 1945.

Paper production for the week ended January 19 was estimated at 94.4%, compared with 89.0% for 1945, with 89.2% for 1944, with 87.9% for 1943, and with 105.0% for the corresponding week in 1942.

Paperboard production for the week ended January 19 was 93.0%, compared with 94.0% for 1945, with 95.0% for 1944, with 88.0% for 1943, and with 101.0% for the corresponding week in 1942.

Wood Pulp

Wood pulp imports from Sweden, reported by the Department of Commerce, aggregated 102,398 tons for 1945. The first post-war shipment of wood pulp from Finland this month is reported at 85 tons, and part of a first shipment of 800 tons of sulphate pulp.

Rags

Demand for No. 1 white shirt, unbleached muslins and all high quality cotton cuttings is reported far above limited supplies. The scarcity of low-priced cotton textiles has become so acute that the cutting trades are faced with the prospect of shut downs because of inability to obtain material. The prospect of increased yardage from cotton mills is not favorable. Inadequate ceiling prices on many cheap lines have diverted the manufacture of low-priced materials into other goods where the margin of profit is somewhat larger. Although exports are a minor factor in the supply situation today, the principal cause of lack of material is the unsatisfactory price situation which discourages production of any but the higher priced garments.

Demand for old cotton rags is heavy in all grades. Roofing mills are reported unable to obtain all the tonnage required. Prices are strong at ceiling levels.

The OPA announced on January 26, 1946 new ceiling prices on imported rags, waste rope and strings, in Amendment 2 to MPR-47. The new ceiling will be specified acquisition costs, plus a mark-up on March 1942 practice. The ceilings will be determined upon individual application to OPA's National Office, Export-Import Branch.

Old Rope and Bagging

A tight situation in rope, cordage and hard fibers is expected to continue throughout 1946, with little relaxation of government control and decrease in purchase contracts. Producers' shipments are expected to be higher than in 1945, which were about three times above the pre-war years.

Limited supplies of scrap bagging continue to maintain a relatively strong market position. Reports this week are indefinite in respect to the volume of consumer buying, which appears to be fair at this date. Domestic roofing bagging was firm at 1.35.

Old Waste Paper

Mill buying of paper stock in all grades is currently reported active. Although the inventory at mills has indicated a steady improvement since October, a larger margin is apparently sought, as the dissatisfaction of Swedish exporters of wood pulp, may possibly result in decreased shipments of pulp during the current year.

Prices in all grades of waste paper are firm, with the market strong, at ceiling levels.

Carter Rice Celebrates

BOSTON, Mass., January 21, 1946—Carter, Rice and Company Corporation celebrated the 75th Anniversary of the firm by a dinner in the Roof Ballroom of the Parker House Friday evening, January 18, with an appropriate program, 187 attending. A feature of the evening was the inauguration of a Quarter Century Club, with 51 members. Pictures were shown of the original location of the establishment in Spring Lane, the later location in Winthrop Square, and the present place of business at 273 Summer street.

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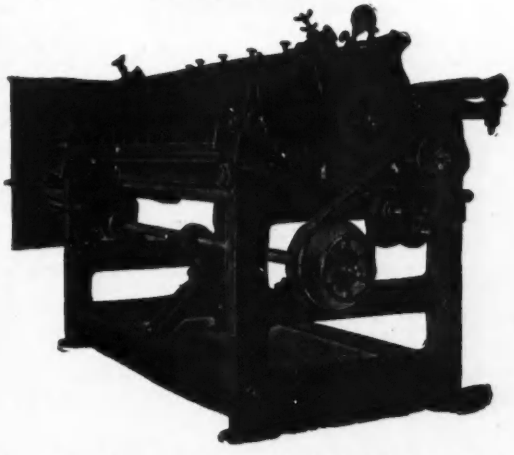

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MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, January 30, 1946.

BLANC FIXE — Prices on blanc fixe continue unchanged at prevailing levels. Demand is reported fair. The pulp is quoted at $40 per ton, in barrels, at works. The powder is quoted at $60 per ton, f.o.b. works.

BLEACHING POWDER—All-over demand continues heavy. Production high. Quotations are unchanged. Bleaching powder is currently quoted at from $2.50 to $3.10 per 100 pounds. All prices in drums, car lots, f.o.b. works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 24 cents per pound; 2,000 pounds, 24½ cents per pound, less than 2,000 pounds, 24¾ cents per pound f.o.b. shipping point. Imported, 24 cents.

CAUSTIC SODA — Demand very heavy. Production large, but under demand. Dry forms reported still in short supply. Solid caustic soda is currently quoted at $2.30 per 100 pounds. The flake and ground are currently quoted at $2.70 per 100 pounds. All prices in drums, car lots, f.o.b. works.

CHINA CLAY—Current demand is reported good on many grades of china clay. Quotations unchanged. Domestic filler clay is quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mines. Imported china clay is currently quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Demand heavy with output increasing. Outlook now appears favorable. Chlorine is currently quoted at $1.75 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN — No offerings or sales. The OPA price on "G" gum rosin is $6.74 per 100 pounds in barrels, at Savannah. "FF" rosin is established quoted at $6.70 per 100 pounds, in barrels, at New York. Average price on seventy per cent gum rosin size is $6.95 per 100 pounds, f.o.b. works.

SALT CAKE — Prices on salt cake continue to be reported unchanged. Domestic salt cake is currently quoted at $15 per ton, in bulk. Chrome cake is currently quoted at $16 per ton. All quoted prices in car lots, f.o.b. shipping point.

SODA ASH—Demand for soda ash is reported heavy. Packaged shipments still slow. Market tight. Prices continue to conform to prevailing levels. Quotations on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Corn market is reported steady. Receipts larger at 1,495,000 bushels. Shipments lower at 515,000 bushels. Demand heavy. Prices unchanged on starch. Pearl is quoted at $3.72 per 100 pounds. Powdered starch is quoted at $3.83 per 100 pounds. All prices in bags, car lots, f.o.b. Chicago.

SULPHATE OF ALUMINA—Demand good. Short supply not improved. Prices of the commercial grades are currently quoted at from $1.15 to $1.25 per 100 pounds. The iron free is currently quoted at $1.75 per 100 pounds. All prices in bags, car lots, f.o.b. works.

SULPHUR — Current consumption of sulphur continues heavy. Market situation unchanged. The quotation on annual contracts continues at $16 per long ton, f.o.b. mines. The current price on contracts at Gulf Ports is $17.50 per long ton.

TALC—Demand reported good. Domestic grades are currently quoted at from $16 to $21 per ton at mines. Canadian at $24 per ton. All prices in car lots.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

Standard News, per ton—			
Roll, contract	*$67.00	@	—
Sheets	75.00	@	—
* OPA Maximum Price.			
Kraft—per cwt.—Carload Quantities Zone A, Delivered			
Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag	*4.375	"	—
* OPA Manufacturers' Prices.			
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½	1.00	"	—
White No. 2	.90	"	—
Anti-Tarnish M.F.	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Toilet—1 M. Sheets—Per Case			
Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.20	"	—
Bleached, Jr.	3.20	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	11.25	@	—
No. 1 Manila Wrapping, 35 lb.	6.00	"	6.25
Boards, per ton—			
News	*50.00	@	—
Chip	*50.00	"	—
Sgl. Mla. Li. Chip	*62.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*63.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$39.10 @ $46.00	$40.25 @ $47.25
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	29.90 " 35.00
75% Rag	23.00 " 27.00	24.15 " 28.25
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds	Ledgers
No. 1..	$10.55 @ $12.75	$11.70 @ $14.25
No. 2..	9.65 " 11.75	9.80 " 13.25
No. 3..	9.20 " 11.25	9.35 " 12.50
No. 4..	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. ex—

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated	$13.65 @	$13.[illegible]
No. 2 Glossy Coated	12.40 "	14.[illegible]
No. 3 Glossy Coated	11.60 "	12.[illegible]
No. 4 Glossy Coated	11.15 "	12.[illegible]
No. 1 Antique (watermarked)	10.25 "	11.[illegible]
No. 2 Offset	9.60 "	11.[illegible]
A Grade E. F.	9.35 "	10.[illegible]
A Grade S. & S. C.	9.60 "	11.[illegible]
B Grade E. F.	8.85 "	10.[illegible]
B Grade S. C.	9.10 "	10.[illegible]
C Grade E. F.	8.55 "	9.[illegible]
C Grade S. C.	8.80 "	10.[illegible]
D Grade E. F.	8.25 "	9.[illegible]
D Grade S. & S. C.	8.50 "	9.[illegible]

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight Not Exceeding OPA Allowances.

Bl. Softwood Sulphite	$86.[illegible]
Unbl. Softwood Sulphite	74.[illegible]
Bl. Hardwood Sulphite	83.[illegible]
Unbl. Hardwood Sulphite	71.[illegible]
Bl. Mitscherlich	81.[illegible]
Unbl. Mitscherlich ...72.80 @	82.[illegible]
N. Bleached Sulphate	86.[illegible]
S. Bleached Sulphate	79.[illegible]
N. Semi-Bleached Sulphate	82.[illegible]
S. Semi Bleached Sulphate	75.[illegible]
N. Unbl. Sulphate	73.[illegible]
S. Unbl. Sulphate	68.[illegible]
Bl. Soda	76.[illegible]
Unbl. Soda	72.[illegible]
Groundwood	$0.[illegible]

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area)	10.50
West Coast (out area)	16.50

	50%-80% Air Dry Weight
Northeast	11.50
Lake Central	11.50
Southern	14.00
West Coast (in area)	9.50
West Coast (out area)	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	6.50	@ 7.25*
Silesias No. 1	—	" 5.75*
New Unbleached	6.75	" 7.50*
Blue Overall	—	" 5.50*
Fancy	—	" 3.50*
Washables	—	" 3.00*
Bleached Khaki Cuttings	—	" 4.25*
Unbleached Khaki Cuttings	—	" 3.50*

*OPA Maximum Prices

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CAMDEN, MAINE

Old Rags

White, No. 1—			
Repacked	*2.80	"	—
Miscellaneous	*2.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Thirds and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.30	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

Pre-War Quotations
All Prices Nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.90	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	3.25	"	3.25
No. 1 White Cottons	4.25	"	4.75
No. 2 White Cottons	3.25	"	3.75
No. 3 White Cottons	2.50	"	3.00
No. 4 White Cottons	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Med. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	1.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shapporios	1.30	"	1.45
New Shapporios	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.25	@	3.30
Wool Tares, light	3.25	"	3.50
Wool Tares, heavy	3.50	"	3.75
Bright Bagging	3.25	"	3.50
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	2.00	"	—

* OPA Maximum Prices.

Old Waste Papers

(F. o. b. New York)
OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
Mixed Books	1.10	"	—
No. 1 White Ledger	2.30	"	—
No. 2 Mixed Ledger, colored	2.00	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.95	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
Old Corrugated Containers	.80½	"	—
Mill Wrappers	1.10	"	—

Twines

All Prices Nominal
(F. o. b. Mill)
(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17½	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.30½	"	—
Whipping	.28	"	—
Soft Fiber Rope	.19	"	—
Cotton	.35	"	—

(Hard Fiber)

Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Prices to Mill)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¼
Light Silesias	.05¼
Black Silesias, soft	.03¼
New Unbleached	.07½
Washable Prints	.04¼
Washable No. 1	.03
Blue Overall	.05½
Cottons—According to grades—	
Washable Shredding	.01¼
Fancy Percales	.04¼
New Black Soft	.03¼
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04¼
Men's Corduroy	.03½
Ladies' Corduroy	.03
Cottonades	.03¼

Domestic Rags (Old)

White No. 1—Repacked	3.80	@	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
White No. 2—Repacked	2.90	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Import)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	@	3.50
No. 1 Clean bright—			
Sisal Strings	.04	"	—
No. 2 Clean bright—			
Sisal Strings	.03	"	—
Sisal Jute	.02½	"	.02¾
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25
No. 1 New Light Burlap	3.80	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila.)
OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½		
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings			

BOSTON

Old Papers

(F. o. b. Boston)
OPA Maximum Prices, Baled

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
New Manila Envelope Guts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.95	"	—
Overissue News	1.10	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.40	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	2.75	@	2.90
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	* —	"	4.00
Mixed Rope	—	"	1.55
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.00	"	3.25
South American	—	"	1.25
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	—
Aust. Wool Pouches	—	"	3.00
New Zealand Wool Pouches	—	"	3.20
New Burlap Cuttings	4.75	"	5.00
Heavy Baling Bagging	4.60	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Roofing Bagging	1.25	"	—

* OPA Maximum Prices.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¾	"	.05
New White No. 1	.06¾	"	.07
New Light Flannelettes	.05¾	"	.06
Canton Flannels, Bleached	.06	"	.06¼
Underwear Cutters, Bleached	.06¼	"	.06½
Underwear Cutters, Unbleached	.06¼	"	.06
Silesias No. 1	.06	"	.06½
New Black Silesias	.05	"	.05½
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06¼	"	.06½
Blue Cheviots	.05¼	"	.05
Fancy	.03¼	"	—
Washable	.02½	"	—
Khaki Cuttings	.03½	"	.03
O. D. Khaki	.03¼	"	.03½
Corduroy	.03½	"	.03½
New Canvas	.06½	"	.07
B. V. D. Cuttings	.06¾	"	.07

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—
Miscellaneous	3.20	"	—
White No. 2—			
Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls	2.25	"	2.30
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—
No. 2	1.45	"	—
No. 3	1.35	"	—
No. 4	1.35	"	—
No. 5, Quality A	1.35	"	—
Quality B	1.30	"	—
Quality C	.95	"	—
Old Manila Rope	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)
OPA Maximum Prices, Baled

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.90	"	—
No. 1 White Ledger	2.30	"	—
No. 1 Heavy Books & Magazines	1.92½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	1.10	"	—
No. 1 News	1.00	"	—
No. 1 Mixed Paper	.95	"	—
No. 1 Roofing Rags	1.55	"	—
No. 1 Roofing Bags	1.45	"	—